MEMORIES OF THE MONTHS

SEVENTH SERIES

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MEMORIES OF THE MONTHS

SEVENTH SERIES

John, 10th Earl of Westmorland.
from the portrait by G. Romney in the possession of the Earl of Jersey.

EDWARD ARNOLD & C°, LONDON.

Memories of the Months

SEVENTH SERIES

BY THE RIGHT HON.

SIR HERBERT MAXWELL

BART., F.R.S., D.C.L., LL.D.

Quid de pulicibus, vitæ saltantia puncta?

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TO THE READER

It was primarily for my own convenience that the first volume of these disjointed notes was published just a quarter of a century ago. Memory is a slippery jade, and requires to be jogged pretty frequently by some form of written record if impressions received from seasons, scenes, and books are not to fade into oblivion. Manuscript memoranda being unhandy for reference, methought it would be a luxury to have them transfigured into print and bound in a volume wherewith a few friends, sharing the writer's fads, might beguile an odd half-hour. It never was in contemplation at that time that the volume should be the first of a series. That it has been followed by six others must be attributed in large measure to the attractive form in which they have been presented to the public by Mr. Edward Arnold.

It was inevitable that many blunders should be perpetrated in a miscellany of this kind, wherein one who is fully conscious of his limitations has touched upon so wide a variety of subjects. He feels, therefore, that his first duty in presenting a fresh volume of *adversaria* is to offer such atonement as lies in his power by exposing the worst of these blunders in a pillory.

> 'Cum relego scripsisse pudet, quia plurima cerno
> Me quoque quæ fuerant judice digna lini.'

738370

FIRST SERIES

Page 215. A line has been omitted from the second stanza of the Buckinghamshire Ballad. After 'Butson's Hill' insert—

'And as many as e'er they pleased they'd kill.'

Page 247. For 'Malcolm Canmore' read 'Malcolm the Maiden.' Malcolm Ceannmor reigned 1058-1093, Malcolm the Maiden 1153-1165.

Page 253, line 14. Leave out 'rushes swiftly at right and.'

SECOND SERIES

Page 8, line 9 from the bottom. I regret to have been guilty of this error. William Scrope (1772-1852) of Castle Combe, author of *The Art of Deerstalking* and *Days and Nights of Salmon-Fishing*, was descended from Richard le Scrope, 1st Baron Scrope (died in 1403), and that branch of the family ended with his only child Emma, who married George Poulett Thomson, Esq., M.P. (who afterwards took the name of Scrope), and died without issue in August 1866. But Henry Aloysius Scrope, Esq. of Danby-on-Yore, Yorkshire, is in direct male descent from Henry, 6th Baron Scrope of Bolton.

Page 12, line 2. For 'Gladwood' read 'Gladswood.'

Page 49, line 16. For 'hassti' read 'Haasti.'

Page 71, last line. A serious slip! For 'cockchafer' read 'click-beetle.'

Page 92. The question propounded here has solved itself. In 1904 I happened to see a great crested grebe (*Podicipes cristatus*) sitting upright on the shingle beside the Sanctuary Lake, and watched the bird through the glass preening its plumage in that attitude for fifteen or twenty minutes. A singular error has crept into the description of this species in the late Lord Lilford's admirable *Coloured Figures of the Birds of the British Islands*, vol. vi. page 109. The generic name is given as *Podiceps*, which means 'rump-headed,' whereas the true name *Podicipes* signifies 'rump-footed,' in allusion to the posterior position of the feet.

Page 120, line 6. For '*frontinalis*' read '*fontinalis*.'

Page 192, line 5. For '*loch-eacha*' read '*each-locha*.'

Page 263, line 12. For '*chamœorus*' read '*chamæmorus*.'

Page 281, line 3. For 'six-and-forty' read 'two-and-forty.'

Page 290, line 16. For 'five' read 'three.'

THIRD SERIES

Page 42. After reading these remarks, the late Canon H. Ellacombe wrote to me :—'The keeper at the Helston Lizard Lighthouse told me . . . that he had never had any of the lights broken but once, and that was by a woodcock that went clean through it. I was unable to ascertain whether the woodcock survived the shock.'

Page 60. Canon Ellacombe wrote to me thus :—'Do you know that the spines of hollies are no protection if a vacant place can be found? A friend of mine near Barnet had a long extent of holly hedges, and he found that if a cow could find an opening it loved to scratch itself, and so made bad worse.'

Page 208, line 11 from bottom. For 'about £100 sterling' read '£177, 13s. 4d. sterling.'

Page 270. On the matter of the Yucca moth, Canon Ellacombe wrote to me thus :—'It seems certain that there is some insect that must fertilise the Yucca besides the *Pronuba*. It fruits in S. Europe. This last spring I gathered a good handful of seeds near Nice. There are certainly natural hybrids there, though the hybrids produced near Naples are by artificial fertilisation. The whole subject is fully gone into in Treleaze's good monograph of the Yucca published last year.'

FOURTH SERIES

Page 8, line 9 from bottom. After the volume had been published I happened to hear another synonym for 'evening.' In Devonshire they speak of it as 'the dimsey,' equivalent in meaning and cognate in origin with the German *Dämmerung*.

Page 68, line 5. For 'mingle' read 'mingled.'

Page 245. Leave out from 'breathing apparatus' in line 4 from bottom to 'like' in line 3. I am informed that the *setæ* or iridescent hairs, which I took to be external *branchiæ*, have no function in respiration, breathing being effected through the skin.

Page 258, line 2. After 'purposes' insert, 'It is stated in Munro's *Bambuseæ* that during the famine of 1864, fifty thousand natives were busy collecting the seed of bamboo, which saved them from starvation.'

Page 280, line 12. For 'Fowler' read 'Flower.' A tiresome misprint of an old and valued friend's name.

FIFTH SERIES

No doubt there are 'howlers' in this volume also, but I have mislaid the notes thereof.

SIXTH SERIES

Page 15, line 3. After 'Gadwall' insert 'Pintail.'

Page 18, line 16. Since this note on wild swans was written a pair of whoopers (*Cygnus musicus*) nested and reared their young in a loch in Perthshire in 1920 and 1921. The destructive vigilance of collectors renders it expedient to suppress mention of the exact locality, but the birds have been identified by competent ornithologists, and I have seen a photograph of the female sitting on her nest. The incident is most noteworthy, for, if I am not mistaken, the only previous authentic record of the whooper breeding in the British Isles is contained in the *Fauna Orcadensis* of the Rev. George Low, compiled between the years 1774 and 1778 and published in 1813.

> 'The wild swan,' says that excellent observer, 'is found at all seasons in Orkney; a few pairs build in the holms of the loch of Stenness. These, however, are nothing to the flocks that visit us in October from the more northern climates, their summer retreat. Part of these continue with us all the winter, and the rest go to Caithness and the other northern shires of Scotland. In April they go off again northward, except the few which remain here for the summer.'

If it were possible to induce or compel gunners to refrain from murderous persecution of these beautiful and absolutely harmless birds, no doubt they would re-occupy their former nesting places, and our eyes would be more frequently gladdened by what I think the grandest display of British bird life—a flock of wild swans, Homer's *ἔθνεα πολλὰ κύκνων δουλιχοδείρων*, winging their clamorous way under a wintry sky.

Page 103, last line but one. One who is so prone to pedantry as to employ a dead language to express what could be rendered equally well or better in his mother tongue, ought at least to avoid blunders in grammar. *Careo* is never intransitive; the phrase here should read, '*caret vate sacro.*'

Page 237, footnote. I regret very much the inconvenience caused to the publishers of Mr. Beebe's *Monograph* by the statement that he was dead. I had been told that he was killed on active service, and I rejoiced to learn that he had returned safely and had resumed preparation of the remaining volumes of his fine work.

Page 291, lines 1 to 5. A priest of the Church of Rome writes to me that some of the holy persons who lived before Christ are commemorated with the Christian Saints in the Roman Martyrology, and gives Isaiah and Jeremiah as cases in point. He also says that I have blundered egregiously in confounding the Immaculate Conception with the Virgin Birth. That may well be so, such matters being too high for me.

Page 314. Archduchess Isabella's constancy, and the colour of her chemise when she doffed it after three years' wear, are commemorated, not only in the scientific title of the Nankin lily, but in that bestowed on the tawny bear of Sikkim—*Ursus Isabellinus.*

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January

I

SELDOM has the snowdrop delayed coming into flower so late as it did in 1918. We have a record extending over sixteen years showing the date on which the first blossom was gathered. Four times in that period this has been before New Year's Day; in 1910 no flower appeared till 19th January, the latest date recorded.

The Snowdrop

The snowdrop is a queer little plant in more respects than one. It chooses the coldest, gloomiest month in the year to array itself in airy finery, which is all thrown off before the majority of flowering things are out of bed, so to speak. It then sinks into the earth's dark bosom to pass therein all the bright summer days and five-sixths of the whole year. Most herbs and shrubs rely on the intrusion of insects to fertilise their seeds; indeed the unromantic fact seems to be that the sole, or at least the primary, purpose of beauty in blossom is to attract such visitors. Somehow or other the snowdrop manages to do without flying and creeping auxiliaries in this matter, for although botanists have detected that nectar is secreted by the green marks on the corolla, and although seed is produced regularly each year in profusion, insect visitors must be few and

far between in January. Tennyson noted this, as he had the knack of noting the secret working of nature, in his poem on the *Progress of Spring*:—

> 'The ground-flame of the crocus breaks the mould,
> Fair Spring slides hither o'er the southern sea;
> Wavers on her thin stem the snowdrop cold,
> That trembles not to kisses of the bee.'

Hardly any rule but has its exception. Once, and once only, have I seen honey-bees, lured out by the sunshine of early March, busy among the chill snowdrop bells. Bees must have been exceptionally early in that year and snowdrops exceptionally late, for the latter are generally at their best in the second week of February. How, then, is fertilisation of the ovary effected? Lord Avebury explains that, although the pendulous anthers form a cone which can hardly fail to be touched by a bee entering the bell, 'in the absence of insect visits the filaments relax, the anthers separate and some of the pollen drops on the viscid stigma.'[1]

Another peculiarity of the snowdrop is that, unlike almost every other bulb which we cultivate for the sake of its blossom, it refuses to be forced into flower. Crocus, narcissus, tulip, hyacinth and squill respond readily to artificial heat, and may be brought into flower weeks, even months, before their natural time. Not so the snowdrop. It is true that by bringing the bulbs into the house and so protecting the young growth from frost, you may, in a hard winter, obtain blooms indoors a little while before their ice-bound brethren in the open; but even so, you will fail to

[1] *Flowering Plants of Great Britain*, p. 417.

induce them to flower before their normal time, which on the west coast is somewhere within the first fortnight after Christmas. Snowdrops (I speak of the common *Galanthus nivalis*), although natives of southern and central Europe, behave like children of the mist and the rain, easily naturalised in the humid atmosphere of the west, but obstinately refusing to take kindly to the hotter, drier districts of Great Britain. To enjoy snowdrops at their finest, you must seek them, not where there is most snow, as in the midland and eastern parts of this island, nor where there is least snow, as in the Scilly Isles and southern England, but to the Atlantic seaboard, where winter cloud droops low and weeps long, as at Ardgowan, on the Firth of Clyde, where words are wanting to describe their profusion. Would that the nearly related crocus shared the immunity enjoyed by the snowdrop from being devoured by the all but omnivorous rabbit. What sheets of gold and purple might then alternate with and succeed the pallor of Galanthus. The snowdrop has ever been a favourite with the poets; the more strange, therefore, that it has no place among the two hundred plants enumerated by Canon Ellacombe as having been mentioned by Shakespeare.

II

Borrowed Plumes

If apology is due for returning to this subject, having already called attention to it in these notes,[1] it must be founded on the gratifying fact that good progress has since been achieved, both in

[1] *Memories of the Months*, Fifth Series, p. 195.

this country and the United States, in putting an end to, or at least a check upon, that against which all thoughtful lovers of nature protested as a nefarious traffic. At the time when my former note was penned —1909—many of the State legislatures of America had dealt with the matter, prohibiting the killing of certain birds, the sale of their plumage, and even the use of that plumage as an article of dress; since then Congress has passed an act extending prohibition to all the States. To persuade the Imperial Parliament to regulate the plume trade by restricting the importation and sale of feathers to those which, like the ostrich's, can be taken without killing or mutilating birds reared and domesticated for the purpose, and to the plumage of birds killed for food, was one of the chief objects to which that excellent and industrious naturalist, Lord Avebury (better and longer known as Sir John Lubbock), devoted the closing years of his life. Many of us were so simple as to hope and believe that all that was needed to secure legislation to that effect was to explain and proclaim the character of the plume trade, the devastation it wrought upon some of the most beautiful and blameless of living creatures, and the misery and suffering entailed upon such victims, chiefly nestlings, which escaped massacre only to die of starvation. We little knew the strength and extent of the opposition awaiting any such measure. It was twofold—the organised resistance of the purveyors of foreign plumes and the indifference of their chief customers, who could not be got to feel any concern for the approaching extermination of the white heron

or the bird of paradise—creatures which they never would behold in their natural environment. Even after Queen Alexandra caused it to be known that she would not allow 'ospreys' to form any part of her attire, only a few ladies followed her example; the majority either gave the matter no attention, or were cajoled by their milliners into believing that 'ospreys' were not what in truth they are—the nuptial plumes of several species of white heron or egret (*Ardea occidentalis, alba, garzetta,* etc.)—but harmless imitations thereof.

Well, Lord Avebury died without effecting his beneficent purpose; trade interest was too strongly organised in opposing all interference with the traffic in plumes. Hundreds of tons, literally, of feathers—the very emblem of lightness—continued to be imported into Great Britain, up to the time when the channels of all kinds of trade were dislocated by the Great War. For instance, in six months of 1913 there were sold in London alone (not to mention Paris, Vienna, and other focuses of fashion) 1411 packages of 'ospreys'—*i.e.* the nuptial dress of the white heron. To make up these 1411 packages no fewer than 115,000 adult herons had been killed, or left to die after the coveted plumes had been reft from them. Even that large number does not represent the full tale of slaughter, forasmuch as the so-called 'osprey' plumes are displayed only during the period of courtship and nesting. The parent birds, therefore, have to be captured or killed outright before their brood is fledged; consequently, for every pair of herons killed, four young ones have either not been hatched, or, having been hatched, have been left to

starve to death. It follows, then, that in the single spring of 1913, 345,000 white herons were sacrificed in order to bedizen the head-gear of British women, who would forfeit no fraction of their charm (in the eyes of mere men, at least) were they to restrict their purchases in that line to ostrich feathers and the plumage of barn-door fowls. What decoration can be more effective than the cock's-plumes of the Italian Bersaglieri?

Lord Avebury had been dead for eight years before the movement which he led bore fruit in the passage of the Importation of Plumage (Prohibition) Act, 1921. The title thereof is somewhat misleading: 'Regulation' would denote its scope more accurately than 'Prohibition.' Under this Act the Board of Trade is required to appoint an Advisory Committee to consider all applications for permitting or prohibiting the importation of the plumage of any bird. A committee of ten has been appointed, with the Marquess of Crewe as chairman. It contains three experts in the feather trade, two experts in ornithology, and four other members well-versed in the subject. It may not be all that advocates for total suppression of the traffic desired; but it is at least satisfactory that the Government have at length been empowered to take action, and have taken it.

It is, however, one thing to make a law and another thing to enforce it. Let us hope that our Board of Trade will display as much energy in this matter as the Board of Agriculture have done in the United States. The chief source of supply of 'ospreys' used to be the breeding colonies of the white heron in the

Southern States. The birds had been well-nigh exterminated before Congress took the matter in hand, and it is good to read in *Nature* for 7th December 1917 about the vigorous measures adopted to preserve what remained:—

'The activities of the United States Board of Agriculture cover a wide field, and happily their behests are promptly attended to. Originally, the preservation of wild birds was undertaken merely from the point of view of economic zoology. During recent years, however, the Board has taken over the charge of numerous and extensive reservations for the protection of birds to save them from the ravages of the plume-hunter and the egg-collector, and they have done magnificent work in that direction. How great are the difficulties of the Board and how wide its powers may be gathered from a statement in the *American Museum Journal* to the effect that news reached the officials that a Japanese poaching vessel had been seen in the neighbourhood of the Hawaiian Islands, where a reservation has been established. At once the revenue cutter *Thetis* was ordered to cruise to the bird islands. In due time she returned bringing twenty-three Japanese feather-hunters captured in the work of destruction. In the hold of the vessel were stored 259,000 pairs of wings, 2½ tons of baled feathers, and several large cases of skins, for which the Japanese, had they escaped with their booty, would have realised more than 100,000 dollars (£20,000).

In Florida, we are glad to learn, the white egrets are slowly recovering from the ruthless slaughter to which they have been subjected; though the warden charged with their protection goes in daily peril of his life from desperate and lawless agents of the plume-trade.'

Mention of Lord Avebury reminds me how much I owe him for insight into many of the less obvious facts

in nature. One could not be in his company long without learning something. It is good to remember how we sometimes played truant together from the House of Commons and went botanising in the Kent marshes. His gentle way of imparting information met on one occasion with a humorous rejoinder. He told me how he was shooting somewhere and was posted with his loader at the end of a cover, waiting the approach of the line of beaters. There was a heap of flints by the roadside, and he asked his loader whether he knew how those stones were made.

'Well, sir,' replied the man, 'I 'spect they growed, same as 'taturs.'

'But,' said Lubbock, 'if you were to watch these stones for twenty years, they would get no bigger.'

'No, sir,' returned the other, 'same as 'taturs, sure enough; you takes 'em out o' the ground and they stops growin'.'

III

The Cyclamen[1]

Contrivances for the dispersal of seed are so manifold, so ingenious and so effective in the majority of plants, that one cannot but be puzzled by the mechanism of the various species of cyclamen, which almost seems to have been devised as a hindrance to dispersal. No sooner is fertilisation accomplished and the flower fades away than the peduncle or foot stalk coils itself into a tight spiral, tucking away the fruit,

[1] Reference in this note is only to the species of cyclamen which are hardy in the British climate. With the behaviour of florists' varieties of the tender *C. Persicum* I am not able to speak from observation.

with a dozen or more hard and relatively large seeds, tightly against the spherical root-stock. As the said root-stock often increases to a breadth of six or eight inches, most of the seeds are discharged on the flattened, sometimes depressed, top, germinate there in a crowded clump, and if left alone, mostly die of congestion. It may be that, in the Mediterranean region, whence most of the hardy species have come to us, cyclamens depend for the dispersal of their seeds on the intervention of ants or other insects. Having never discovered ants of any kind in our flower-garden (a somewhat singular fact), our cyclamen have to get along without the intervention of those diligent creatures. Swine are said to be fond of the acrid root-stocks of cyclamen (whence the English name 'sow-bread'), and no doubt if they rout them out, the seeds must be scattered; but this seems an auxiliary too fortuitous to be trusted for sure propagation of the plant. It is to this queer habit of rolling up the flower-stock into a tight coil that the genus owes its name cyclamen, from the Greek κύκλος, a circle. It suggests the parallel of overfond parents, whose exaggerated affection and anxiety for their offspring hinder them from going forth into a wicked world, whereby the youngsters are condemned to enter 'blind alleys.'

Whether in flower or leaf, the beauty of both spring and autumn cyclamens is so fascinating that it is a pity they are so seldom grown in British gardens. The most lavish display of them which I have seen is in Mr. J. C. Williams's famous grounds at Caerhays, in Cornwall. There a wide expanse of lawn under spreading

cedars is covered in winter and spring with the opulent leafage of *C. Europæum* (I am quite unable to distinguish between this and *C. hederæfolium* and *Neapolitanum*, if indeed these are distinct species), and the blush of delicate colour in autumn must be delightful. Memory dwells fondly on the spring bloom of *C. coun* by the roadsides at Tremough, near Falmouth, and on the autumn display under the trees in Sir George Holford's garden at Westonbirt. It is within the power of any one who owns a bit of pleasure-ground to enjoy the like, forasmuch as all that these hardy little plants demand is good drainage, some lime in a poorish soil, and freedom from competition with rank vegetation. Even rats and mice leave the roots alone.

Howbeit, much disappointment has befallen amateurs in planting purchased roots. Even if the vitality of these has not been impaired by storage in a dry, town atmosphere, one is very apt to condemn them to a lingering death by planting them upside down, owing to the fact that, in *C. Europæum* at least, rootlets are thrown out chiefly from the upper surface of the tuber-like root-stock. I speak with feeling, having sacrificed many cyclamens to this blunder in bygone years. To-day—15th February—I have been saving the lives of scores of seedling *C. Europæum*, the offspring of a colony thriving, as these plants readily do, among the needles covering the bare ground under a fir tree. Each of these seedlings consists of a tiny translucent globe, with a few root fibres and a miniature leaf. All must have perished had they been left crowded together on their parent's corky bosom; but, being pricked out on

suitably bare ground under pines or firs, they may be trusted to make a pretty show a couple of autumns hence.

Most of our plants have rose-coloured blooms, descended from parents which I grubbed out of a loose stone wall near Ragusa in Dalmatia; but a seedling with pure white flowers sprang up in a gravel walk in our garden and has produced a numerous progeny of the same wan hue.

Gerard traduced this innocent plant most gratuitously, declaring that it was most injurious to women in that state of health which wives do greatly desire who love their lords. 'About the place where it groweth in my garden,' says he, 'I have fastened stickes in the ground, and some other stickes I have fastened also cross-waies over them, lest any women by lamentable experiment find my words to be true by their stepping over the same.'

IV

To-and-Fro Movements of Salmon

The question has often been discussed among anglers—Why do salmon, ascending rivers with the primary intention of depositing their spawn, enter them in the early spring, and even in the winter months, with their ovaries so little developed that they cannot undertake reproduction before late autumn at earliest? The habits of salmon vary so considerably in different rivers, large and small, that it would be rash to offer an explanation of general application; but my own observation, confirmed by the

evidence of net-fishers, river-watchers, and others, has convinced me that in some rivers at least, a considerable number of the salmon that run in spring and early summer return to the sea before the spawning season. It is right to say that my observation and the evidence referred to apply only to rivers of moderate size, not to large rivers like the Tay or the Tweed.

Attention was first drawn to the question of to-and-fro migration of salmon by the late Mr. Dunbar, when, as lessee of the entire fishings, rod and net, of the Thurso, he had excellent opportunity for observation, and, as a watchful naturalist, made good use of it. In the Thurso, large clean salmon leave the sea during the winter months, ascending into Loch More, a sheet of water about fourteen miles above the tide and of no great depth,[1] whence after a sojourn of some weeks or months, they drop back to the sea, their skin bearing a ruddy tinge, but with their ovaries and milt still small. The net-fishers, both in the Thurso and other rivers, are perfectly familiar with this class of fish; and anglers, meeting them in late winter and early spring, have learnt to esteem them when cooked as being much superior to the small fish that run in spring.

The following incident may serve to show how these winter fish are met. The angling season on Thurso opens on 11th January. In 1896 I fished that river on eleven days between 23rd January and 8th February. I landed eight clean fish in the first five days, after

[1] The depth of this lake has been increased, I understand, by about four feet since I used to fish the Thurso; the intention being to store water for the provision of summer spates.

which the weather became very bright and warm and the water fell very low, and I only landed one fish in the last five days. My companion, the late Mr. F. Mason, getting weary of whipping a dwindling river in hot sunshine, determined to have a cast on Loch More, which used not in those days to be fished before April. It is a ten-mile drive thither from Brawl Castle where we were staying, and motor-cars had not yet come into vogue. Moreover, on arriving at the loch Mason found the boathouse locked up, and had to force open the door; so it was about two o'clock before he got afloat. The air was warm and springlike, with a gentle breeze; but in that northern latitude it is dark before four o'clock. At that hour Mason was back at the boat-house with four salmon, from 18 lb. to 20 lb., killed on the fly. I have no doubt whatever that these fish, belonging to the winter run, would have been back in the salt water before the usual opening of the fishing on Loch More on 1st April. The alternative proposition that they would have remained in the loch for nine months, with no food to nourish them, and then have repaired to the spawning grounds in the tributaries to the loch, seems incredible.

The Thurso is the northernmost river in Scotland, flowing into the sea 28 miles west of John-o'-Groat's; let me now record an experience in the southernmost river of Scotland, namely, the Cree, whereof the estuary in Wigtown Bay lies several miles south of the latitude of Newcastle-on-Tyne. In the year 1900 I became joint-tenant with five other anglers of the rod and net fishings in the Cree and its tributary the

Minnick.[1] We took off all the nets in the river and estuary, and the fish had a perfectly free run to the upper waters, where they usually appear at the beginning of March. I was absent in Norway during June and July. When I returned I was informed that the upper reaches of these rivers had been full of salmon that had run up in April and May, one of our watchers having counted one hundred and twenty on his beat when the water was low and clear. There was a heavy spate in July, and nearly all these fish disappeared. Whither? They had not run higher, because above that beat the river becomes a ramification of hill burns where their presence would have been easily detected. I ascertained from the net-fishers in Wigtown Bay that after the aforesaid spate they had been taking a number of dark fish, such as they were accustomed to look for after a flood in July. I was anxious to get some of these fish for examination at the Edinburgh Research Laboratory, but I was too late. I only secured one, a male fish about 7 lb. weight, much discoloured.

In the following year I forwarded to Edinburgh for dissection three of these dark fish that had been taken in the sea-nets. Unfortunately, I cannot now lay hands on the report which I received on them from Dr. Noel Paton; but it was in effect similar to that upon the single fish examined in 1900, that the skin

[1] We did not get possession of the left bank of a part of the upper Cree until the following year. On 4th May 1900, I killed four spring salmon on that beat with the fly; but an angler on the opposite bank landed eight with worm.

was much discoloured, the muscle pale and soft, the gills full of parasites and no sea-lice on the body; leaving no doubt that it had recently spent a considerable time in fresh water. It is impossible that any flood, however heavy, could have washed these fish down from the upper waters against their inclination, because not only does the river flow for two miles, immediately below its confluence with the Minnick, through a canal-like channel called the Loch of Cree with a barely perceptible current, but there are also fully eight miles of winding, muddy, tidal estuary for these fish to traverse before reaching the nets in Wigtown Bay.

It is to be noted that both the Thurso and the Cree, in which the observations above described were carried on, are small rivers, wherein it was comparatively easy to ascertain the movements of salmon. In large rivers such as the Tay and the Tweed accurate observation is more difficult to conduct; but in the Spey, which I have fished in many seasons, I am informed that the net-fishers at Speymouth are quite familiar with dark fish returning, as they do not doubt, to the sea in late summer.

The questions remain, Why do these fish leave the sea and return to it without spawning? What are those heavy winter fish doing in Loch More, fourteen miles from the tide, in December and January, eight or ten months before the first pair of spawners may be seen on the redds? Answers of varying degrees of probability will suggest themselves to different minds; the problem does not lend itself to dogmatic opinion,

and it is with considerable diffidence that I venture to explain the impression I have received from the ascertained facts.

To begin with—the salmon, even though it spends the greater part of its life in the sea, and, after childhood, derives all its nutriment from marine creatures,[1] is a native of the river wherein it was hatched from the egg and spent the first year, or two years, of its existence. The river, therefore, must be pronounced to be the home of the salmon. In its second or third year it obeys the impulse which sends it to sea, where, only, it can find enough food to satisfy the demands of a constitution of extraordinary vigour. In the sea it remains so long as those demands are clamant; but sooner or later the whole of that vigorous frame becomes stuffed with nutriment, appetite fails, and the fish yields to an impulse to return *home* and rest. Possibly that impulse may be strengthened by a wish to escape from seals, porpoises, and other predatory foes, and to get rid of troublesome marine parasites. Anyhow, up come the salmon to the scenes of their youth. Some, no doubt, are acting under the *nisus generativus*; their ova and milt grow towards maturity, and in autumn they go on the redds in the ordinary course. But those fish whereof the ovaries remain undeveloped act under no such stimulus. They simply want repose, and, after lying in the river for some weeks or months,

[1] Be it far from me to renew in these pages the vexed controversy as to whether salmon feed in fresh water after passing the smolt stage. I am merely stating the case as it appears to me, with all respect due to those who hold other opinions.

slowly consuming the nutriment stored in their tissues, appetite revives, and off they go to the sea to satisfy it, returning again to reproduce their kind when they are in a fit state to do so. That seems to me the simplest, and perhaps the true, explanation of the to-and-fro migration of salmon.

February

V

Butcher's Broom

This quaint little shrub, though seldom planted nowadays, when we have such a bewildering variety of foreign evergreens to choose from, must have been a favourite with our forebears, forasmuch as there are few old pleasure-grounds that do not contain darksome clumps thereof. Unluckily, it does not seem to have been generally known that, whereas butcher's broom is nearly always unisexual, that is, bearing male and female flowers on separate plants, it requires the presence of a male plant among females to ensure the production of the bright scarlet fruit, which is as big as a cranberry. These brighten up the field hedges in the south of England, where the plant is indigenous, and constitute for most people the only attraction of the species; but for botanists the butcher's broom possesses several points of interest. Anything less suggestive of a lily it would be difficult to conceive, yet it belongs to the Lily order, being the only monocotyledonous shrub native to these islands. Its nearest affinity is with asparagus, and the succulent young shoots which it sends up in spring among the hard, dingy verdure on the old wood, are eaten, it is said, by the peasantry in some parts of Europe. I have

long cherished the intention of sampling it as an esculent, but hitherto have failed to hit off the right moment.

The structure of this plant is a successful piece of camouflage, effectively disguising its kinship with the affluent clan to which it belongs. The true leaves have degenerated into colourless scales set at the bases of what appear to be leaves, but are actually only flattened twigs ending in a sharp spine, technically termed a cladode. The inconspicuous greenish-white flowers are set each in the centre of the lower surface of a cladode. Viewed through a lens the minute perianth will be seen to be six-cleft, after the manner of the *Liliaceæ*, strangely disproportioned to the showy fruit whereof it is the preface. A lens is also required to enable one to detect the sex of the flowers—the pistil of the female as distinct from the anthers of the male. Having ascertained the sex of your plant, I venture to recommend you to get one of the other gender, which will ensure an autumn crop of very pretty berries.

VI

Bitterns—a coincidence

In the closing days of the winter of 1921-22, I happened to meet my old friend Mr. Abel Smith of Woodhall Park, Herts. I give his name in full, because our meeting led to a coincidence which requires all the corroboration that may be had. He told me how, a few days before (on St. Valentine's Day), two persons walking beside the Bean as it flows through his park, noticed a large bird flapping on the river bank. They went to the spot and found that it was a bittern in distress from having

attempted to swallow a jack six inches long, which had stuck in its gullet. They pulled out the fish; but it was too late to save the bird, which expired at their feet from exhaustion.

That, in itself, was an incident worthy of note, inasmuch as the bittern is now one of the rarest of birds in our well-drained land; but the coincidence is to follow. Leaving London a few hours after parting with my friend, I landed at my own door the following morning at 6 A.M., and while awaiting breakfast took up the fresh numbers of the *Scottish Naturalist* (Nos. 121 and 122). Judge of my surprise when, on opening that scrupulously scientific periodical, I found on page 22 the Herts story neatly capped by one from Perthshire. Mr. T. M'Naughton, walking along the course of a small burn near Braco in Perthshire, chanced upon a bittern suffering from precisely the same kind of misadventure as proved fatal to the bird on the Bean. In this case 'a good half-pound trout' was the cause of the trouble. Mr. M'Naughton extracted the fish, took the bird home, nursed it back to vigour, and presented it to the Edinburgh Zoo, where, at the present time of writing, it is thriving in an aviary in company with American bitterns and night herons.

The occurrence of a bittern in any part of Great Britain has come to be noteworthy, for the species had approached very near extinction as a resident in our islands (the last instance of a nest having been recorded in 1868), until the establishment of a nature reserve in Norfolk provided a sanctuary for it. There, I am told, this fine bird may now be heard uttering its extra-

ordinary booming cry on any fine night in May or June. It is true that bitterns have never ceased to be winter migrants to this country; but it is surely remarkable that two should have met with a similar accident in the same winter in counties so far apart as Herts and Perthshire.

The ghostly booming of the bittern has earned for it a variety of names. Its full-dress ornithological title is *Botaurus stellaris*, and Pliny (lib. x. cap. 42) says that in the neighbourhood of Arles the natives called the bird *taurus*, a bull, because of its bellowing. In French it is known as *butor*, cognate with our 'bittern'; but it also goes by the provincial names of *bœuf-d'eau*, *taureau d'étang*, etc. Among our own people it has been variously termed 'bittour,' 'buttour,' 'mire dromble,' 'butterboom,' and so forth, which may serve to explain the pretty frequent occurrence in British topography of such names as Butterhole, Butterwash, etc., denoting places where the queer love-note of the bittern was heard of yore.

The fate of the two bitterns recorded above brings to mind the quaint aphorism which Sir James Turner placed on the title-page of his *Pallas Armata*, a treatise on military tactics published in 1683: *Plures necat gula quam gladius*—Gluttony claims more lives than the sword.

VII

The Fur Seal

However cordially one may sympathise with the motives and objects of the Humanitarian League (and I, for one, earnestly wish them good speed in all *reasonable* effort to avert needless

persecution and suffering from the lower animals), it is not given to all lovers of nature to accept their teaching in its entirety. It gives me the greater pleasure, therefore, as one who has occasionally been castigated in the journal of the League because of my partiality for what these *censores morum* denounce as 'blood sports'—salmon-fishing, fox-hunting and the like—it gives me pleasure, I say, to find myself in complete accord with Mr. Joseph Collinson, author of a brochure published in 1909 entitled *The Fate of the Fur Seal.*

The 'fate' foreshadowed is that which has already been allowed to overtake several beautiful or interesting species of vertebrates, namely, immoderate pursuit without regard to sex, age or condition, resulting in ultimate extinction. When such pursuit is known to be conducted with heartless cruelty, causing intense and needless suffering to thousands of highly organised creatures, it would be a reproach to humanity if no attempt were made to check it by effective regulation.

Mr. Collinson, who writes with commendable moderation, supports his appeal with the testimony of so many eye-witnesses of the seal-fishing as to leave no room for doubt about the horrible circumstances of the massacre which goes on year after year under the flags of Great Britain and the United States.

It should be remembered that the northern fur seal (*Callorhinus ursinus*) is quite distinct from the seals of the Atlantic, and inhabits only the North Pacific and Behring Sea as far as the region of Arctic ice. These seals repair in spring in vast numbers to the Pribyloff Islands off the coast of Alaska, where they

congregate for breeding purposes in what, by rude analogy, are called 'rookeries.' These rookeries belong to the United States, and the annual killing is conducted under strict regulations imposed by that Government. Only males are allowed to be killed, and of these not more than 100,000 annually. This may seem an exorbitant drain upon the colony, but in truth it is a benefit to it. The males are polygamous, the harem of an old and vigorous one numbering ten or fifteen wives. For a period of three or four months the males take no food, never leaving the islands to fish, but spend their whole time trying to filch each other's wives, fighting furiously and to the death, so that the mortality among them must always be very heavy, even should no hunter ever set foot upon the islands. Nor is the mortality confined to the combatants; many females and young get trampled to death in the mellay.

Now the slaughter of 100,000 large animals (the male fur-seal measures from four to eight feet long) cannot be other than a painful, even a revolting spectacle. It is the 'bachelor' or young males that are taken. These lie in droves on the higher ground, watching enviously the matrimonial proceedings of their more powerful seniors on the flats. A driving party of white men and alert Indians creeps round between a company of these bachelors and the shore, surrounds them, and drives them two or three miles inland to the killing ground. It is this 'drive' whereof Mr. Collinson complains as needlessly cruel; for the seal, so swift and graceful in the water, travels awkwardly and painfully on land. He does not make

it clear whether it would be possible to shorten the journey, which is thus described by Professor H. W. Elliot:—

'As the drove progresses along that path to the slaughtering grounds, the seals all go ahead with a kind of walking step, and with a succession of starts, spasmodic and irregular, made every few minutes, often pausing to catch their breath, and making, as it were, a plaintive survey and mute protest. Every now and then a seal will get weak in the lumbar region, then drag its posteriors along for a short distance, finally drop breathless and exhausted, quivering and panting, not to revive for hours—days, perhaps—often never.'

At the end of this *danse macabre* the doomed creatures are made to pass between two men, who fell them with a blow on the nose with a heavy club.

It is an ugly business at best, enough to turn the gorge of one not hardened to it: yet, after all, probably the suffering of the victims is not actually greater than what they would inflict upon each other in mortal combat if left to fight it out among themselves. But if the American land-sealing be considered amenable to more merciful methods, what shall be said of the pelagic sealing as carried on in the Behring Sea, where the British enjoy a monopoly secured by treaty? The proceedings there seem to stand far more in need of reform than those on the islands.

The female seals seek the open sea to recruit and feed after their agitating courtship and the exhaustion consequent upon reproduction, nursing, and a fast of several months. They leave their young on the islands or on the ice, and set to work feeding ravenously on

fish. When surfeited, they go to sleep floating on the waves, and are then easily approached and speared by the hunters. It is stated that almost all the seals killed by British and Canadian crews are females, some of them being still gravid, others nursing mothers, whose hapless offspring either are left to die of starvation or are clubbed for the sake of their long, soft fur.

'I write,' says Captain Borchgrevink in *The Story of the Arctic Ocean*, 'of what I have seen over and over again, without being able to prevent it, for the excitement and the sight of blood seems to turn our fellows into fiends incarnate for the time being. . . . The ice was thickly strewn with baby seals; not even a lamb itself is more lovely and innocent-looking than one of these. They are about two feet or two and a half long, swaddled, as it were, from head to tail with skin covered with long yellowish-white hair. Barring the wee black nose and the jet-black, tender, loving eyes, there is hardly another feature distinguishable, so well has Nature wrapped them up against the cold. They never attempt to move off; they can't. One blow from the sharp end of the club, and the baby is sweltering in its gore. . . . The killing of the young creature before fleecing is humane enough, but this is not always done. . . . Beasts in the shape of human beings sometimes skin them alive! I have seen these fellows pitch a living flayed seal into the water to see whether it would move off or not. . . . I frequently saw the gunners trample on a baby seal to bring up the poor mother who heard it cry. She was then ruthlessly killed.'

These dreadful doings are made more loathsome, if that were possible, by the beauty and intelligence of the victims, their natural docility, and the passionate affection uniting parent and offspring. It is surely no extravagant request which demands that restrictions

similar to those put upon human savagery in domestic slaughter-houses should be enforced in these Arctic solitudes. The presence of a few inspectors with the sealing fleet might prevail to purge the industry of its worst features, although that would have no effect in arresting the process of extermination, so long as seals are denied what has been provided in most civilised countries for far less interesting and valuable animals, namely, a reasonable close-time. In England, no man may take a fresh-water coarse fish between March 15 and June 15, under pain of £2 for a first conviction and £5 for subsequent ones. The fur seal is a nobler creature, and of higher economic value than a roach or a gudgeon; worth an effort to prevent it disappearing, one should say. The question is one of more than humane sentiment. Sealskins are a valuable article of commerce, and there is no reason why moderate toll should not be exacted for an indefinite period from wild herds which, if considerately treated, would be practically inexhaustible.

It has been shown that the slaughter of a large number of male seals is positively beneficial to the race; to regulate that slaughter in British, as has already been done in American, waters, seems more reasonable, as well as more feasible, than the remedy advocated by Mr. Collinson, which is to induce ladies to forswear altogether the use of sealskin in their raiment.

* * * * * *

I have allowed the note above to stand as it was written in 1910, when it seemed that the northern fur seal was in imminent risk of extinction. It may serve as my humble testimony, not only to the prudence and energy of the United States Government in rescuing a valuable industry from destruction, but to the degree in which that result was owing to the timely exertion of Mr. Collinson and the Humanitarian League on behalf of a cruelly persecuted species. A yearly census of the seals repairing to breed on two of the Pribyloff Islands has been conducted by the American Bureau of Fisheries since 1912. Whereas the herds numbered about three millions towards the close of the nineteenth century, it was ascertained in 1909 that they had been reduced by indiscriminate slaughter to 134,000. It was obvious that the licence to kill 100,000 seals on these islands and within the three-mile seaward limit (which marked the extent of the United States authority) could not be continued without exterminating the herds. But it was not within that limit that the deadly mischief was wrought; that was done on the ocean by seal-hunters of all nations among the mother seals, which, taking no account of the three-mile limit, went far to sea in pursuit of fish. To avert the impending catastrophe international action was required, and negotiations for that purpose were undertaken between the Governments of the United States, Great Britain, and Japan. The three-mile limit was first extended to sixty miles. When it was found that the mother seals wandered far beyond that, the limit was increased to two hundred miles. Finally, in 1914 it was agreed between the

three Governments that seal-hunting should be suspended altogether until the 'rookeries' became repopulated. Hunters were duly compensated for interference with their industry, while the British and Japanese Governments were indemnified for such rights as they had surrendered under the adjustment of sea limits by the award to each of fifteen per cent. of such revenue as might accrue to the American Government from the industry when it should come to be revived.

Such revival is in a fair way of being attained. American gun-boats patrol the seas to ward off poachers, and the census taken of the herds in 1920 showed that the seals had increased to 550,000 from a total of 134,000 in 1909. It may seem difficult to ensure accuracy in the enumeration of a population so amphibious and slippery as that of the Pribyloff Islands, and indeed it has to be gone about carefully, for the old bulls are furiously pugnacious and attack any human or other intruder that ventures among them. But the habits and movements of the herds are so regular and so well known to the men in charge of the islands, that it is possible to conduct an effective census under due precaution. Enumerators count the bulls and cows from the summit of cliffs, and afterwards the young seals before they go to sea.

Of the commercial value of the industry which is thus in process of being restored, there can be no doubt. It is now proposed to allow 25,000 young male seals to be killed annually. As the value of each 'pelt' is estimated at £30, that means an immediate gross

revenue of £750,000; and the return will increase proportionately to that of the number of seals, which, under existing protective measures, ought soon to reach the old figure of three millions. May I offer cordial congratulation to the Humanitarian League and to Mr. Collinson on the result to which they contributed so materially by their advocacy. They at least enlisted the sympathy of a considerable section of the educated public, and made known to general readers facts which otherwise might never have leaked out of departmental pigeon-holes.

VIII

Heligoland, a shred of *terra firma* about a mile long and 600 yards across its broadest part, stands out of the North Sea about 36 miles north-west of the mouth of the Elbe. It was ceded by Great Britain to the German Empire in 1890 in exchange for certain territory in East Africa, and many hard things have been uttered since against the late Lord Salisbury, who, as Prime Minister and Foreign Secretary, must be held responsible for the transaction. With the merits of the deal we have no concern here, though it may be observed in passing that, although the German Government were allowed without remonstrance to convert this isolated rock into an impregnable *place d'armes*, had the British Government attempted anything of the kind while it was under their flag, it would have been interpreted and accepted as a direct flout upon the German Empire. For the purpose of these notes the

Bird Migration

interest in Heligoland is purely ornithological and retrospective.[1]

The little island represents all that remains of a wide tract of land which has been swallowed by the sea. Erosion went on steadily so long as the island was British territory, the west cliff receding seven feet in the forty years preceding the change of ownership. That process must have been arrested when the Germans converted the crumbling rock into a steel-girt fortress. What goes on within the island we have, or had till lately, no means of knowing; but so long as it continued under the British flag it served as a resting-place for millions of migrating birds, which remained faithful to the traditionary route adopted tens of thousands of years ago when a vast plain occupied the space now filled by the North Sea. Previous to 1890 the birds used to arrive in such countless flocks that their capture afforded chief means of livelihood to a large proportion of the population. One of these islanders, Heinrich Gätke by name, spent fifty years of his life, not only in shooting and trapping the migrants, but in keeping a valuable record of the dates of their arrival and departure. His notes were embodied in a volume in 1895, which has added materially to our knowledge of bird-movement, showing that many species, formerly regarded as stationary and permanent residents in our islands, do in fact migrate seasonally and as regularly as the woodcock and the wildgoose.

Take, for example, the smallest of all British birds,

[1] This note was written before the Great War, in consequence whereof the fortifications have been razed.

the gold-crested wren, which, by the way, is not a wren —*Troglodytes*—but a *Regulus*, closely related to the warblers. Wherefore let us speak of it correctly as the goldcrest. This feathered pigmy, with a wing-spread no wider than that of one of the larger hawk-moths, we only know as it flits incessantly from bough to bough in pursuit of diminutive insects—aphides, chermes, and suchlike. It would seem impossible, had we not positive proof to the contrary, that tens of thousands of these feeble creatures perform twice a year a journey of hundreds of miles across the ocean, and that, too, at the stormiest seasons—autumn and spring. Hear what Herr Gätke has to say about them :—

'The migration of the goldcrests is performed with perfect regularity year after year, and conducts them not only in hundreds, but in many hundreds of thousands in one night to this island [Heligoland]. On the following morning their merry call-note resounds from the bushes in all the gardens. . . . In 1882 the earliest individuals arrived on 8th September, and the migration proceeded, with occasional interruptions, throughout the month. With the approach of October a considerable increase in the number took place, and on the night of 28th September the migration assumed such vast dimensions that even an approximate computation of the numbers was quite out of the question. Perhaps the simile of a snowstorm may help to convey an idea of the scene. . . . At daybreak the whole island was literally covered with the birds, but by ten o'clock in the morning the majority had resumed their journey.'[1]

That was the autumnal southward flight. The northward migration in spring is equally well marked,

[1] *Heligoland as an Ornithological Observatory*, pp. 317, 318. Edinburgh, 1895.

although the casualties of travel and the attacks of predatory species have more than decimated the flocks.

'Imagine a mild and clear evening in spring. The sun has set long ago . . . the last soft note of the redbreast has died away, and for some time no sound has broken the scented stillness of the air. Suddenly, the clear fine note of our little wren is heard, and soon afterwards the little bird is seen rising from the neighbouring bushes against the luminous evening sky. At measured intervals its call-note —*hut, hut, hut!*—is heard as it flies off in slightly ascending spirals over the gardens; then from every bush, here and there, near and far, the cry is answered, and from all sides his travelling companions mount upward in the wake of the earliest starter. Assured by the answering voices that all the sleepers are aroused, he ceases circling about and rises almost vertically with brief and rapid strokes. Soon all assemble in a somewhat loose swarm; the call-notes are silenced when the last straggler has joined the departing flock, and the tiny wanderers vanish from sight.'[1]

One wonders how goldcrests and many other weary-winged travellers relish the exchange of peaceful shrubberies and tranquil market gardens for the clash of arms and the shock of high explosives. No doubt they still make use of Heligoland as a resting-place—a half-way house to the Continent, for birds are intensely conservative in the route of their migration. Their ancestors passed that way ten or twenty thousand years ago, when what is now the North Sea was an expanse of forest and marsh, and the birds have learnt, and will learn, no other. In alighting on Heligoland they are too weary to seek anything but rest. Even if food were

[1] *Heligoland as an Ornithological Observatory*, pp. 318, 319. Edinburgh, 1895.

available for the multitude, they would be too much exhausted to search for it. It is one of the mysteries of migration, how birds can perform these long flights without nourishment. I have watched them crossing the eastern Mediterranean and alighting, sometimes on a passing ship, sometimes on a barren rocky islet where there was not even a drop of fresh water. They tuck their heads back among their feathers and go to sleep at once.

Since this trivial note was written, several years ago, my friend Mr. Eagle Clarke has published his *Studies in Bird Migration*,[1] which fill two fat volumes crammed with information at first hand. Herr Gätke conducted his observations comfortably, never having to move more than a mile from his own fireside. He had but to register the passage of birds, and this he did faithfully, adding considerably to our understanding of their seasonal movements. Far more laborious were the conditions under which Mr. Eagle Clarke worked. He shrank not from a month's imprisonment in the Eddystone Lighthouse, nor from tossing for a like period on board the Kentish Knock Lightship. He spent his holidays on dreary wastes like the Flannan Islands, Sule Skerry, St. Kilda and Fair Isle,[2] intended to do so in 1898 on the Isle of Ushant (Ouessant), the most

[1] London, Gurney and Jackson, 1912.

[2] This name contains a delusive suggestion of fair scenery and climate; but the word 'fair' is our rendering of the Old Norse *fær*, sheep, and was bestowed of old by Scandinavian rovers who found pastures there for their scanty flocks. Even so the mountain alongside of Helvellyn is disguised by the name Fairfield, suggestive of villadom, but representing the Norse *fær fjall*, sheep fell.

westerly land of France. Unluckily the Fashoda imbroglio was at white heat in that September. No sooner did Mr. Clarke and his companion, Mr. T. G. Laidlaw, set foot upon the island than they became the subject of angry suspicion. What can these *rosbifs* be after? Birds? *Bêtise!* Who cares about birds except for food? and these Englishmen disdained to eat such fare. No: they were using their spy-glasses with a far more sinister purpose. They were spies of the British Government. There were no police on the island, but a sergeant *gens-d'armes*, radiant in blue and silver, was sent down from Paris, and dogged every movement of the strangers, which of course put quiet observation out of the question. Popular suspicion and resentment rose daily, till at last, acting on advice from the British Consul at Brest, our ornithologists beat a retreat, having spent only the inside of a week at their work instead of a full month as they had hoped. I refer to Mr. Eagle Clarke's volumes only to recommend their perusal to anybody interested in the movements of birds, for nowhere else can be found such an exhaustive, trustworthy or recent report on the subject.

IX

The Age of Birds

In a former note I have referred to the exceedingly high rate of mortality among what are known in the trade as 'cage-birds,'[1] and elsewhere to the difficulty of obtaining data to determine the average duration of life in any species of wild bird.[2]

[1] *Memories of the Months*, Sixth Series, p. 65.

[2] *Op. cit.*, Second Series, p. 281; Fifth Series, pp. 50-52.

Not only is it hardly possible to identify individual birds in a state of freedom, but it is uncertain in what measure the unnatural conditions of captivity may shorten or prolong the span of life. I gave three instances in which the ages of three birds of different species had been ascertained—two of them with absolute accuracy. First, that of an erne or white-tailed eagle (*Haliaetus albicilla*) which, taken from the eyrie on Cairnsmore in Galloway in 1858, lived on a chain at Cairnsmore House till it died in 1900, aged forty-two years; second, that of Colonel Leith Hay's cockatoo, which, taken from a rebel prince's palace during the Indian Mutiny of 1857, died at Leith Hall, Aberdeenshire, in March 1908, aged fifty-one years, *plus* whatever age it was when taken by the 93rd Highlanders with other loot in the palace; and third, that of three female Canada geese (*Bernicla Canadensis*), brought as goslings to the loch at Monreith in 1884, whereof two died in the winter of 1912, the third surviving till 1916 when it was aged two-and-thirty years.

I have since received trustworthy particulars of a fourth case. In 1889 Lady Seale of Wonaston Court, Monmouth, bought a pair of birds called in the trade seed-eaters or St. Helena singing finches (*Serinus ? hortulanus*): the hen-bird only survived a single year of captivity, but the cock inhabited a small cage till the autumn of 1911, having thus lived twenty-two years in confinement.

When one reflects on the ceaseless activity of almost all birds and the vast spaces traversed by some of the migratory species, the wonder is, not that the majority

of cage-birds succumb to the ills engendered by a sedentary life, but that any of them are able to retain good health. The cases cited above indicate a life-span considerably longer than that of mammals of corresponding bulk. Considering how greatly nutrition is interfered with by the decay, attrition or displacement of teeth, it would seem that birds have gained rather than lost in discarding the mouth-armature of their reptilian ancestry.

March

X

Among the minor evils which we apprehended as a consequence of the Great War was the undue increase of rabbits, owing to the men upon whom we were wont to rely for keeping them in check being drawn away to the colours. It was a serious outlook; for, once let rabbits take full possession of suitable ground, it is a matter of much difficulty to oust them, infinite mischief being wrought upon growing crops and young plantations in the meantime. Isolated effort is only of temporary effect, for these insatiable rodents are very mobile. If every rabbit could be killed on any one estate, the stock would be continually replenished from neighbouring properties, unless simultaneous action had been taken upon them. Two circumstances seem to have helped to avert the scourge which we anticipated; first, the cold and wet summer of 1916, which was markedly unfavourable to the propagation of rabbits, multitudes of the young ones perishing in the rank, drenched herbage; and second, the great increase in stoats and weasels, owing to the suspension of trapping consequent on so many trappers being sent overseas for the destruction of their own kind.

Concerning Rabbits

It is difficult to estimate which animal costs the

owners and occupiers of land most dearly—the rabbit or the brown rat. Of these two evil beasts, the rabbit must be reckoned the least objectionable, not only because its flesh is excellent food, but because it is more practicable to keep the race in check than it is in the case of rats. Probably both rabbits and brown rats are more numerous in the British Isles than any other wild mammal; yet it is certain that neither of them is indigenous; both are undesirable aliens. The brown rat (*Mus decumanus*) was unknown in Britain until the eighteenth century. It arrived in this country in cargo ships, and multiplied with such prodigious rapidity as to reduce our native black rat to the neighbourhood of extinction, for *Mus rattus* is no match either in strength or fecundity to the abominable foreigner.

As for the rabbit, it is believed that its original home was the Spanish peninsula; for it is as inhabiting that land, the Balearic Isles, and Corsica that it receives earliest notice in literature. Polybius, writing two hundred years before Christ, said there were no hares in Corsica, but plenty of animals resembling (κύνικλοι) them that burrowed in the earth. Strabo, writing one hundred and fifty years later, described rabbits as abounding in Spain, and it is interesting to note that he mentioned that ferrets were employed in catching them. He also stated that the farmers of Majorca and Minorca had suffered such loss through depredation by rabbits, that they petitioned the Roman Government for grants of fresh land.

It is not known, even approximately, when the rabbit was first introduced to Britain. It is quite likely

that the Roman colonist imported them for food. Escapes from the hutches and pens would readily make themselves at home on the cultivated lands which were surrounded by forest. That they are not indigenous to the British Isles may be inferred from two pieces of negative evidence—first, that no remains of the rabbit have been identified in peat or any other post-tertiary deposits; and second, that, while the hare has its name in the old Gaelic and Welsh languages, there is none for the rabbit, showing that the Celtic population at the time of the Roman invasion were not acquainted with the animal. The modern Gaelic *coinean* and Welsh *cwning* are merely adaptations of the Middle English *coni*, *conig* and *coning*—our *coney*.

Grievous as is the perennial damage inflicted in this country by rabbits, and serious as is the expense of protecting agricultural crops and young woods from their depredation, it sinks almost to insignificance beside what farmers have suffered through the introduction of this rodent to Australia and New Zealand. Writing in the *Zoologist* in 1888, 1889 and 1894, Professor Strong graphically described the havoc wrought in those lands by rabbits, which, like many other animals taken from the northern to the southern hemisphere, multiply there with redoubled energy.

'I do not think,' says he, 'that any one who has not witnessed with his own eyes the appalling numbers of these pests can appreciate the terror with which the settlers regard them. In Victoria they threatened to eat out the first settlers on the rich western district. Messrs. Robertson of Colac spent over £20,000 in exterminating them. They

imported Scotch rabbit-trappers and established them in the now flourishing township of Colac. These trappers dug out as many burrows as they could, and blocked up others with masonry; and in the end the rabbit had to give way (on Messrs. Robertson's land) to the Scotchmen. But it is needless to say that a number of trappers are employed upon every Australian property in the neighbourhood of a rabbit-infested district. . . . Foxes were introduced into the south of Victoria, but they seem to have come to the conclusion that it was easier to catch a lamb than a rabbit. . . . Wire netting is used on a very large scale; some of these fences are hundreds of miles long; but there is always a chance of rabbits burrowing under the netting, or of their being fenced in.'

It is well for the beauty of our woodlands that so many monocotyledons possess some virtue that protects them against attack by rabbits. The Lily and Amaryllis orders appear to be immune, else we should have no wild hyacinths in our woods, no snowdrops or daffodils in our meadows. Unhappily, though the genus Iris in most of its species is unpalatable to rabbits (witness the yellow fleur-de-lys that adorns the waterside, and the gladdon which displays its scarlet seeds to cheer the wintry days), crocus, whereof the whole race belongs to the order Irid, is treated by these unhallowed rodents as a choice delicacy. The loss to our spring landscape is infinite, as one may realise by imagining what charming results would ensue from sheets of purple, white and golden crocuses lavishly spread in parks and pleasure-grounds.

It occurred to me this morning to speculate on the peculiar property which ensures the safety of the common star of Bethlehem (*Ornithogalum umbel-*

latum), whereof the leaves, now pushing up luxuriantly over wide spaces of ground, so closely resemble those of the crocus. Although a native of southern Europe and Syria, it is quite at home in our sloppy climate, spreading freely through the grass, punctual in opening its starry white flowers in early summer at 11 P.M. and closing them at 4 P.M. (Greenwich, not summer, time). About the generic name *Ornithogalum*, meaning bird's milk, Mr. Weathers remarks in his excellent *Bulb Book*—origin mysterious; but its significance is easily explained. We read in 2 Kings vi. 25 that the famine in besieged Samaria was so severe that 'an ass's head was sold for fourscore pieces of silver and the fourth part of a cab of dove's dung for five pieces of silver.' Now from early youth onward it puzzled me to imagine to what use could dove's dung be put as nutriment. The matter was explained to me by the late Canon Tristram of Durham, who had travelled much in the East and wrote *The Land of Moab*. He told me that the star of Bethlehem whitened the plains of Syria with its flowers in spring, which had earned for it from the Greeks the name of *Ornithogalon*—bird's milk, but from the Arabs a less elegant term expressing 'dove's dung.' The bulbs of this plant being edible, of course commanded a high price during the siege. When a friend presented me with a copy of the revised version of the Old Testament, I turned up the passage in Kings to see whether the true sense had been given to the statement; but found that the only change had been to spell the measure 'kab' instead of 'cab'!

At first sight it seemed strange that the bulbs of the

star of Bethlehem should be wholesome food for human beings, and that rabbits evidently found that the foliage disagreed with them; but this is the case with several of the *Liliaceæ*. In China the bulbs of the tiger lily, in Japan those of *Lilium auratum*, are prized as nourishing food, but rabbits don't meddle with the stems and leaves. I have long intended to sample the bulbs of star of Bethlehem, but am uncertain as to the proper season for lifting them.

XI

The Last Wolf in Scotland

It requires but moderate acquaintance with the social history of these islands to realise the immense advance in comfort, security, and the decencies of life which was achieved in the course of the eighteenth and nineteenth centuries; and in no part of the realm have advances been so rapid and changes so sweeping as in Scotland. Yet even there, on the whole, they have been more evolutionary than revolutionary. Laws have been suffered to lapse into disuse without formal repeal, with the result that at the beginning of the twentieth century the Statute Book was still loaded with a vast number of enactments which neither hurt nor benefited anybody, by reason that they were wholly inoperative, but which it was thought expedient to put officially to death by a kind of spring-cleaning termed Statute Law Revision. Hence in the session, I think, of 1903 we were reminded of the continuity of our national chronicle by one such holocaust of ancient Scottish laws. A bill was prepared in the Scottish Office

solemnly repealing upwards of two thousand Acts of the Scottish Parliament dating from the year 1420 down to the legislative Union with England in 1707. Whether it was worth the expense of drafting and printing such a bill may seem doubtful. One inclines to think that it was undertaken to gratify the passion for tidying up which distinguishes some intellects not of the first order. For instance, the urgency is not apparent for revoking the Order of Parliament which in the year 1567 instructed 'the Laird of Lochlevin anent the keiping of the Kingis mother [Mary, Queen of Scots] in the house and fortalice of Lochlevin.' There could not be much risk, one should think, of confusion or offence arising, even in the reign of Edward VII., out of the Act of 1481, which made provision for hostilities against 'the revare [robber] Edward calland[1] himself King of Ingland.'

Yet let me speak with the diffidence becoming in one unlearned in the law. Our rulers may have been haunted by apprehension lest some of this venerable artillery might one day go off, whereby the equanimity of certain of the lieges might be grievously disturbed.

[1] 'Calland,' the present participle of the verb, which we should write 'calling,' but in old Scots that form was reserved for the gerund, or noun of action. This distinction survived in Scottish literature till the sixteenth century, but was soon lost in speaking by the suppression of the final consonant in both forms. 'In the southern English,' says Dr. Murray, 'the two inflections were confounded before 1300; but in the northern tongue they are quite distinct from the earliest period to the sixteenth century, the participle being in *-and*, *ant*, the gerund in *-yng*, *-yne*, *-een*, *-ene*.' He quotes this couplet from Richard of Hampole:—

'The *movand* world withouten doute
Sal than ceese o *turnyng* aboute.'

It may be granted that it was prudent to revoke the Act passed by Parliament sitting at Perth in 1424, whereby it was 'statut and the King forbiddis that na man play at the fute ball' under penalty of fifty shillings for each offence—no nominal fine in the fifteenth century. Modern members of Parliament do not, as a rule, seek relaxation in football; but a goodly number of them would be affected by a further enactment in 1461 that 'the fute-ball and golf be utterly cryit down and nocht usit.'

In drafting the Statute Law Revision Bill above mentioned care was taken to explain in the schedule why it was expedient to repeal these old laws: the reason given for repealing the statute of 1424—'the Wolfe and Woolf birds[1] suld be slain'—is indisputable, if somewhat naïvely expressed—'Obsolete: wolves being extinct.' But they were far from extinct in the Highlands in the fifteenth century; wherefore it was enacted by this statute that every baron should summon his tenants to hunt wolves at least four times a year, 'and gar slaie them.' A hunter who killed a wolf was entitled to a fee of two shillings, which, in the depreciated Scots coinage, represented about threepence sterling. Even that modest guerdon was cut down to sixpence Scots in the following reign, while any tenant who neglected to turn out for the hunt might be fined a wether. Yet provision was made against indiscriminate pursuit, even of wolves. 'Na man sall seeke the woolfe with schot, but allanerlie [except only] in the

[1] Whelps. Anglo-Saxon *brid* (whence our 'bird') signified anything 'bred'—the young or brood of any beast or bird.

time of hunting them.' This was not from any sportsmanlike consideration for wolves, but because it was not in human—or at least in Highland—nature to carry a 'hag, half-hag, harquebuss, culvering,' or any other small-arm, and refrain from taking a pot shot at deer.

It seemed a strange revival of the past in the present when the dust of centuries was shaken from this venerable statute and it was laid before a twentieth-century House of Commons to be repealed. It started me to hunt up old lore bearing on the extinction of the wolf in Scotland. Throughout the sixteenth century wolves seem to have been generally distributed throughout the Scottish Highlands. Bishop Leslie of Ross published in Paris his Latin *History of Scotland* in 1578, which was translated by Father Dalrymple in 1596, containing the following statement on the subject:—

'Our nychbour Inglande has nocht ane wolfe, with quhilkes [with which] afore they war mekle molested and invadet; but we now [have] nocht few, z^e^ contrare, verie monie and maist cruel, chieflie in our north cuntrey, quhair [where] nocht only invade thay scheip, oxne, ze [yea] and horse, bot evin men, specialie women with barne [child] outragiouslie and fercelie thay ouirthrows.'

Improvement in fire-arms brought about a reduction in the packs. The primitive matchlock was too unwieldy to handle and too uncertain in ignition to be relied on in a wolf-hunt, and the wheel-lock was too cumbrous and complicated to be of much use except in defending a fortress. But towards the end of the sixteenth century the Germans devised the snaphaunce, fitted with a flint-lock which, subjected to successive

modifications and improvements, remained the approved mode of ignition in small-arms until Victorian times, when Brown Bess and Joe Manton yielded place to the percussion cap.

Where and when was the very last wolf killed in Scotland? The claim has been made on behalf of several districts. Pennant, in his well-known *Tour in Scotland* (1769), describes how Sir Ewen Cameron of Lochiel slew what has been accounted the last of that dreaded race in 1680; and there remains to this day in possession of the present Lochiel a flint-lock gun about five feet long with which the deed was done, together with a pair of gigantic boots in which the chief is reported to have been standing when he fired the shot. This may well have been the last wolf killed in Lochaber; but it is certain that the breed survived considerably later in some other parts of the Highlands.

The exact date when the last wolf was killed in Sutherland is uncertain, probably between 1690 and 1700; but William Scrope, writing more than eighty years ago, has placed on record the details of the exploit as he received them on the spot.[1] Half-way between the rivers Brora and Helmsdale the mountains facing the North Sea are cleft by Glen Loth, whereof the lower part affords fair pasture; but above the junction of the Sletdale burn, a couple of miles inland, the scenery becomes savage in the extreme. The story runs that the sheep of the crofters having been ravaged after the old manner when wolves were plentiful, an old hunter named Polson, living at Wester Helmsdale,

[1] *The Art of Deerstalking*, chapter xiii. (1838).

was employed to examine the recesses of the glen. He brought a couple of boys with him, his own son and a herd-lad. Among the rocks of Glen Sletdale, between Creag-a'-bhocain and Creag-a'-bhodaich, he found a narrow cleft, evidently in recent use by some wild animal as its den. After throwing in stones and taking other means to rouse any creature that might be within, Polson caused the boys to creep into the cave, the opening being too narrow to admit himself. Presently the lads cried out that there was a litter of five or six whelps within, and Polson shouted to them orders to kill them and to come out quickly. At that moment a great wolf, dam of the brood, dashed past Polson, and was half into the cave before he managed to catch hold of her by the tail, which, says the tradition, he wound round his left arm. His gun was out of reach, for he had propped it against a rock before helping the boys to enter the den. It taxed all his strength to hold the brute, which strove furiously, but mutely; for, like the fox, but unlike the dog, the wolf utters no cry in fighting for its life. The entrance to the den being blocked in this way, the interior was quite dark, and a small voice was heard crying in Gaelic—'Father, what is keeping the light from us?' 'If the tail breaks,' replied the hunter, 'you will soon know that.' Polson managed to draw his knife, with which he stabbed the wolf repeatedly as deeply as he could, but was unable to reach any vital part. She tried to turn upon him, but the hole was too narrow; until, at last, exhausted by loss of blood, she allowed herself to be dragged out by the tail, when Polson finished her off, and with her

the whole race of wolves in Sutherland. It is rather strange that Charles St. John, who spent his days in Sutherland so profitably for many readers, and was there about the same time as Scrope, has not recorded any tradition about wolves in that wild district.[1]

The death of what, in all probability, was actually the last wolf killed in Scotland is described in *Lays of the Deer Forest*, by the brothers John Sobieski and Charles Edward Stuart. This work, published in 1848, has been more generally neglected than it deserves. The first volume contains original poems in Gaelic, with translation in English, of the merit whereof I can offer no opinion, not having perused them; but the second and larger volume, filled with notes to the poems, notes to these notes, and again notes on the notes to the notes, is a fascinating and valuable repertory of Highland lore and natural history. There must be persons still living who remember the authors, for John died no longer ago than 1872, and Charles Edward survived till 1880. In their youth they served in Napoleon's armies at Leipsig and Waterloo; and although they failed to convince any but sentimental Jacobites of their descent from Prince Charlie through the Countess of Albany, they made many friends in the

[1] I would fain have given a photograph of Creag-a'-bhocain, and in furtherance of that wish my kind friend, the Rev. Archibald B. Scott, accompanied by Mr. Spark, photographer in Helmsdale, undertook three pilgrimages through Glen Loth and Glen Sletdale. Twice they were completely baffled by storm; on the third occasion some photographs were taken of the traditional spot, but again the weather interfered to such an extent with the light that the plates are not suitable for reproduction. My cordial thanks are due to these gentlemen for their kindly efforts to fulfil my wish.

north, and amassed a vast amount of Highland tradition that must otherwise have faded into oblivion. As they justly observe, it is natural that 'the last wolf' should be commemorated in many districts as the last in Scotland; but they give pretty good evidence that no strath can prove a later date than 1743, when a famous hunting took place in the romantic valley of the Findhorn.

The Monadh-liath, a desolate upland whence the Findhorn takes its rise, was haunted by packs of wolves long after their kind had been killed out in more accessible regions. Only in summer did the crofters drive their herds to this distant pasture; in winter the shielings stood empty; the hills were abandoned to deer, and the deer to the wolves. But as the eighteenth century wore on, even this wilderness ceased to be sanctuary; and before it was half sped, a wolf became a rare sight. The most noted *carnach* in destroying wolves was MacQueen of Pall-a'-chrocain, a massive *duine-uasail*, who stood six feet seven inches in his brogues. To this famous hunter one winter day in 1743 came word from MacIntosh of Moy[1] that a great black beast had come off the hill and carried away a

[1] The Stuarts, who are my authority for this story, protest vigorously against the modern usage in speaking of the chief of the second house of Clan Chattan as *The* Mackintosh. There is no instance in Gaelic, they declare, of the definite article *an* being prefixed to *Mac*, the proper term of filiation. It has come into use through false analogy with The Chisholm, a title which appears rightly enough in the Gaelic *An Siosalach*, the definite article indicating the race of Chisholm, originally Norman, and, it is alleged, of common descent with the Cecils. MacIntosh means 'Son of the Chief,' and to speak or write of 'The Mackintosh,' or, as has been done lately, 'The Mackintosh of Mackintosh,' is sheer parody of Gaelic nomenclature.

couple of children near Cawdor, and that a *tainchel* or hunting was to meet at Figiuthas on the morrow, at which MacQueen's presence was required in compliance with the Act of Parliament.

The hunters assembled at daybreak, but where was MacQueen? He was not wont to be 'langsome' on such an occasion; and his hounds, not to mention himself, were indispensable for the work in hand. MacIntosh waited impatiently as the cold morning wore on. At last MacQueen was seen coming along in leisurely fashion. The chief hailed him, rebuking him sharply for wasting the best hours for getting on the drag of the game.

'Ciod e a' chabhag? What's the hurry?' was the cool reply, which sent an indignant murmur through the shivering clansmen. MacIntosh uttered an angry threat. 'Sin e dhiabh! There you are then!' said MacQueen, throwing back his plaid and flinging a grey wolf's head on the heather. The hunters had been cheated of their sport; but they forgave Pall-a'-chrocain, whose renown in the forest stood higher than ever, and MacIntosh 'gave him the land of Seanachan for meat to his dogs.'

One of the best casts on the Drynachan water of Findhorn takes its name from Pall-a'-chrocain, MacQueen's ancient holding; and I must own that when, one September morning in 1892, I landed three salmon from that pool, and lost a fourth, my thoughts were almost as busy over that hunting a century and a half before, as they were with the business I was after. For me, at least, angling and every other field-sport would

be reft of half their charm, but for the associated memories that have gathered so closely over almost every acre of our many-peopled island.

We have got rid of wolves, but some of several terms coined by Highlanders of old for that scourge of their flocks have become indelibly fixed in our place-names. The commonest of these terms seems to have been *madadh* (pronounced 'madduh'), whereof the primary meaning was 'a dog'; the fox, now spoken of as *sionach* (shinnagh), being known as *madadh ruadh*, the red dog, while the full-dress title of the wolf was *madadh faol*, the wild dog, or, poetically, *mac tir*, son of the soil. Howbeit the standard Gaelic for a dog is *cu*, genitive *con*, as in Achnacone in Appin; and it is fairly safe to interpret such names as Drummoddie, Blairmoddie and Culmaddie as the wolf's ridge, field, and wood or corner.

The name Spittal, which occurs so often on the map of Scotland, bears many different meanings. Sometimes it denotes land once owned by the Knights Hospitallers; at other times the site of an almshouse for the aged or a charitable institution for lepers. More often, especially in the Highlands, it commemorates a refuge erected by one of the Orders of regular clergy for the shelter, and even the gratuitous entertainment, of travellers and wayfarers. All the main passes to the Highlands were furnished with spitals as refuges from wolves, as well as from the weather; for packs of wolves remained a real danger till the days of Queen Mary, and, locally, a pest for a hundred years later. Such was probably the origin of Dalnaspidal on the

bleak watershed between Strathspey and Strathtay, and of the Spitals of Glenmuick, Glendye, and Glenshee.

XII

Never was there more apt illustration of the weather described by rural meteorologists as 'feeding a frost' than we have had during this winter of 1916-17. From before Christmas onward, right through January, the mercury hovered round the freezing point, never more than two or three degrees above or below it. Then, when the frost was full 'fed,' it set to work in earnest, and a spell of three weeks set in of such cold as has not befallen us since the memorable rigours of 1895. In that year the cold was far more intense than anything we have had to bear in 1917, for on that occasion the shaded thermometer here twice registered zero Fahr.; but a thick and beneficent mantle of snow, such as I have never known before or since to lie on our western seaboard, averted injury from half-hardy plants. In 1917 the risk was greater, for although the mercury has only twice fallen so low as 17° Fahr. (15 degrees of cold), there has been no snow. Yet we have escaped cheaply, having no serious losses to record, owing to the frost having been steady, without trying alternation of thaw.

The mischief done by sunshine upon frozen plants was very evident on February mornings upon a large bush of *Rhododendron barbatum*, which was inadvisedly planted on a full south exposure about thirty years ago. This fine Himalayan species protects itself from frost by rolling its leaves so tightly back upon

Rhododendron Loderi at Compton's Brow

their midribs that they look like a lot of dark green pencils. That was its aspect at 9 A.M., having little resemblance to an evergreen; but by mid-day the sun had beguiled it; the leaves were as broad and green as at midsummer, and the whole trying process had to be gone over daily. Other plants of the same species, protected by trees from the sun, maintain their attitude of defence. Moral—let all early flowering rhododendrons and those that start early in growth (which *R. barbatum* prudently does not) be planted where the sun of February may not strike them.

Of the vast multitude of Asiatic species of rhododendron which the energy and enterprise of collectors have disposed for the amateur's choice, we grow more than one hundred species here. It is interesting to note the different attitudes they assume to protect themselves from cold. Taking two of the large-leaved kinds, *R. Hodgsoni* presents a singular appearance, rolling back its great leaves into narrow cylinders eight to twelve inches long; but *R. Falconeri* folds its leaves not at all, but depresses them vertically. *R. Smirnovi, Caucasicum, Ponticum, pachytrichum, crassum* and *Edgworthi* also hang their leaves uncurled. *R. Thomsoni* and *arboreum* depress them, but while the former curls them moderately backward, the latter advances the outer margins. *R. Fargesi* and *neriiflorum*[1] twist

[1] This beautiful species suffers under an obvious misnomer. *Neriiflorum* means 'with flowers like an oleander,' than which no epithet can be less appropriate for the intense scarlet tubes of this rhododendron; but its foliage does resemble that of the oleander pretty closely, wherefore the specific name ought to be, and perhaps was until wrongly written, *neriifolium*.

their leaves tightly into pencils at the first touch of frost; whereas *R. Indicum, ciliatum, glaucum, hirsutum,* and *ferrugineum* do not alter the position or arrangement of their leaves with the mercury at 18° Fahr.

No idiosyncrasy in most Ericaceous plants, especially in rhododendrons, has been more generally recognised than their refusal to grow in soil containing lime. Hence when Mr. Wilson and Mr. Forrest first described how they had found in Western China several species of rhododendron not only flourishing in fissures of limestone rock, but actually rooted in screes consisting wholly of limestone débris, their reports were received in this country with much surprise, and even, let it be confessed, with some incredulity. But the evidence of two such experienced and trustworthy witnesses could not be seriously doubted or set aside. Subsequent research and experiment have amply confirmed their observation. It has long been known that the roots of certain, probably all, plants of the Heath order, have their roots closely covered and penetrated by a fungus which acts as feeder to its host. The common ling or heather, for instance, is incapable of drawing nutriment from the soil except through the ministration of its humble messmate. So it is with rhododendrons; if the fungus sickens, so does its lordly host; if it perishes, the rhododendron is doomed to death by starvation. It appears, therefore, that the inability of rhododendrons to grow in a limey or chalky soil must be traced to the fact that such soil is fatal to the fungus. How, then, can some species of rhododendron flourish in China

upon a soil which in this country must prove fatal to them ?[1]

The nineteenth century had drawn to a close before any botanist had an inkling of the vast number and variety of Asiatic species of rhododendron. The late Sir Joseph Hooker was accounted to have struck the headquarters of the genus in the Himalaya and Sikkim and to have skimmed the cream thereof. It now appears that he touched no more than the fringe of a region incalculably rich in this branch of the Heath family. The species introduced from China during the last five-and-twenty years, ranging from lowly creeping alpine forms like *R. erastum* up to forest trees like *R. giganteum*, must be reckoned in hundreds; and although none as yet discovered surpasses in beauty some of the Indian species or the fiery splendour of others, we do not yet know what treasures may still remain to reward the hardihood and patience of collectors.

There is no more beautiful shrub in winter than *Pieris* (*Andromeda*) *Japonica*, so thickly set with clustered racemes of ruddy flower buds, which, clustering closely over the pale evergreen foliage, are nearly as showy in bright sunshine as the alabaster blossoms contained in them will be presently. It is a pity that this shrub is not more commonly planted, at least in moderately mild districts, for it is infinitely more lovely than its pallid cousin *P. floribunda*, which one meets everywhere. *P. Japonica*, however, demands choicer lodging than the other, for it is impatient of cold winds.

[1] See page 66.

The frost has put an end, for the nonce, to the flowering of the brilliant Brazilian shrub which we used to know as *Abutilon vexillarium*, that is, the standard-bearer, a name so appropriately distinctive of its gleaming scarlet and yellow bells; but which we are now bidden to speak of as *A. megapotamicum*, because it grows on the banks of the Rio Grande. Of all shrubs known to me this is, I think, the most persistent flowerer. It is more tender than the Chilean *A. vitifolium*, requiring the comfort of a wall to recline on even in the mildest parts of these islands; but let that wall face full south, and only severe frost will suffice to quench the fiery tassels which hang from every spray. I have never known it set seed in this country, which no doubt accounts partly for the prolonged flowering season. I saw it first in Mr. Gerald Loder's garden at Wakehurst Place, Sussex, a notable store-house of good things, and retain a lively sense of gratitude for the cuttings he bestowed on me. Despite its reputation for tenderness, it has remained unhurt after the mercury had fallen to 9° Fahr. It is one of many American plants which bear scarlet flowers, a colour confined in the British flora to the corn poppy and the field pimpernel (*Anagallis arvensis*), both weeds of cultivation, probably imported from sunnier climes. Our sunshine seems to be too intermittent and watery to light up fiery hues. We have plenty of good pink wild flowers and some proper crimson ones, but the tendency of the deeper shades is towards magenta. Fancy if our foxgloves blazed out in the livery of *Desfontainea* or our dingy wild sage lit up the flames

of *Salvia splendens*! Neither is orange to be found in the corolla of any of our native flowers, except some splashes of that brave tint on the standards of bird's-foot trefoil (*Lotus corniculatus*). There is, indeed, an orange form of the Welsh poppy (*Meconopsis Cambrica*), but that is probably a garden sport. Luckily the exotics which fly these gay colours and can put up with our climate lose nothing of their splendour under our cloudy firmament. For sheer shrieking orange-vermilion I know nothing to match the flowers which the Chilean *Habranthus pratensis* flings out in May; and that form of *Geum Chiloense* called 'Gibson's Scarlet' is really dazzling.

XIII

A Libel on the Plane

Currency has been given in the press to a statement which, if unchallenged, may tend to injuring the reputation of one of the nobler forest trees. It is asserted, on what authority we are not informed, that the minute spicules scattered in spring from the ripe fruit of the Oriental plane act as agents in causing catarrh in human beings, especially among the population of London. This theory, if that term may be applied to sheer guessing, is devoid of any evidence to support it. It is true that the dispersal of plane seeds and their volatile achenes by the winds of March synchronise with a vast amount of catarrh among the inhabitants of London; it is also true there are more fine planes in London than any other kind of tree. But before making random accusation against the tree, which is well-nigh unique in its capacity to resist, and

even to relish, the conditions which are fatal to most kinds of forest growth in our murky metropolis, it might be well to ascertain whether spring catarrh prevails to a greater extent in London, where planes so greatly abound, than it does in cities where there are no planes, or at least none to speak of, as Birmingham, Chester, Manchester, Edinburgh, Glasgow, etc. An unprofessional estimate of the relative number of persons so affected must be of little value; but the impression received by an ordinary citizen is that the malady is as prevalent in spring in one large town as another.

Anyhow, it is cruel to give a bad name, without attempting to justify it by proof, to the chief sylvan ornament of London's parks, streets, and squares. It reminds one of those delightful lines in *Rejected Addresses*, satirising those who traced every mishap and adversity to the direct agency of Napoleon Bonaparte:—

> 'Who burnt, confound his soul! the houses twain
> Of Covent Garden and of Drury Lane?
> Who makes the quartern loaf and Luddites rise?
> Who fills the butchers' shops with large blue flies?'

April

XIV

The death of one person and the serious illness of some others, has been reported in the newspapers as the consequence of eating the leaves of rhubarb as a substitute for spinach. This brings to mind an observation by the naturalist, John Ray, written more than two hundred years ago. 'It is the interest of all mankind that all persons should be cautioned of adventuring upon unknown herbs and plants to their prejudice.' As a rule, people are pretty chary of experiment in that direction. Children, indeed sometimes are seduced by the glitter of poisonous berries to their cost; but we elders lie under no serious temptation to add to the already liberal list of well-known esculents. One day during the Great War, when the national food supply was in danger of stinting through the action of German submarines, I was clearing a border from an invasion of *Alstromeria aurantiaca*, the roots whereof are said to be eaten by the natives of Chile. It seemed wasteful to throw away a barrow-load of these succulent tubers if they were really wholesome, so I wrote to inquire of Mr. H. J. Elwes, who has explored so much of southern South America, whether he

The Risk of Rhubarb

had any experience of them as food. He replied—'No; and so long as I can get a decent potato, I don't intend to try Alstromeria!' It is well that Sir Walter Raleigh showed more enterprise or curiosity than my friend, for he it was who, on his estate near Cork, raised the first crop of potatoes grown in the British Isles, from tubers brought home by his colonists in 1586.

Mention of the potato, belonging as it does to the Natural order *Solanace*, which contains such harmful herbs as deadly nightshade, henbane and tobacco, brings to mind that insoluble problem—How did the human race ascertain what fruits and roots could be eaten with impunity or advantage? Who first found out that the fruit of the tomato—*Solanum lycopersicum*—was wholesome and refreshing, while that of potato—*S. tuberosum*—provided the means for painful suicide? Knowledge must have come as the result of many an anxious experiment, whereof probably prisoners of war, slaves and poor relations were made the subject.

Rhubarb, about which I set out to prose, has not been used very long in this country as an early, cheap, and (as I think) a nasty substitute for fruit. Although the root of the plant, as the source of an approved drug, has been imported in large quantities from very early times, the plant itself was not grown in England till about 1620. Nine years later John Parkinson published his *Paradisi in sole Paradisus Terrestris; or a Garden of all sorts of pleasant Flowers which our English ayre will permit to be nursed up* (it is affection, not pedantry, that tempts me to give the full title). In

that work he gave a woodcut representing rhubarb, with the following explanation:—

'I have a kind of round-leafed dock growing in my garden, which was sent to me from beyond sea by a worthy gentleman, Mr. Dr. Matth. Lister,[1] one of the King's physitians, with this title—*Rhaponticum verum*—and first grew with me before it was ever seen or known elsewhere in England . . . the leaves have a fine acid taste. A syrrupe thereof made with the juice and sugar cannot but be very effectuall in dejected appetites and hot fits of ague.'

It may be assumed that Parkinson meant the stalks when he wrote of the leaves. Anyhow, he considered them only as medicinal—a kind of cocktail for 'dejected appetites.' It was long before the plant came to be grown and cooked as an esculent; but now it covers hundreds of acres in the market-gardens of all our great towns. Although it is true that the leaf-stalks, before they turn green, may be eaten by most persons without detriment, yet it is well to remember that what gives flavour to the cooked stalks is a strong irritant poison, for the leaves contain large quantities of oxalic and nitric acid, which must be saturated with sugar before the dish is palatable. Perhaps I am prejudiced against it, remembering that, in old fox-hunting days, my boot-tops were cleaned with oxalic acid. While these poisons may be consumed in small quantities by persons of normal digestive power, they certainly disagree with some constitutions, and it never can be prudent to partake of cooked rhubarb as liberally

[1] A name that was to be brought to high lustre nearly three hundred years later.

as one may do of apple-pudding, whereof the agreeable flavour is derived from malic acid.

In the English Midlands wine is, or used to be in my schooldays, commonly brewed from rhubarb. Perhaps in the foregoing remarks I have trenched unwarrantably upon the science of medicine and chemistry, wherein I have no skill; wherefore I shall shield myself by quoting the letter of a medical man which appeared in the *Gardener's Chronicle* so long ago as 1853.

'However good the wine made from rhubarb may be, I take the liberty of advising your readers not to drink it. It is well known that the acidity of rhubarb stalks is owing to the presence of an acid salt—the binoxalate of potash—a combination of the poison oxalic acid, and the alkali potash; this salt does not exist in sufficient quantity in the rhubarb stalks to produce its poisonous effects, and the same may be said of the wine. But there is another danger attending its use in the form of wine which ought not to be overlooked. All hard water contains lime, and when mixed with the juice of the rhubarb stalks the binoxalate of potash is decomposed and an oxalate of lime is formed. Now this oxalate of lime is the constituent principle in the mulberry calculus, and there is a peculiar condition of the human body known to medical men as the oxalic diathesis, which depends upon the presence of this oxalate of lime in the blood (I use the word blood for obvious reasons). This oxalic diathesis has been proved by Dr. Golding Bird to be much more common than was supposed before this gentleman brought the microscope to assist him in his pathological researches. Such being the case, it is obvious that any article of common use which contains the oxalate of lime, or even the oxalic acid or its salts, must be more or less injurious to health, more particularly to those in whom there exists a pre-disposition to assume the oxalic diathesis. It should be borne in mind

that oxalic acid is formed in the human body by the decomposition of sugar, urea, etc., and the diathesis is not uncommon from this cause. If it is thus easily produced indirectly, *a fortiori* it is still more likely to arise from the direct use of rhubarb wine. Therefore I say to your readers, eschew the doubtless very agreeable beverage which has entered, through the medium of your columns, into competition with *Sillery mousseux*.'

XV

Rhododendrons at Castle Kennedy

He who allows himself to be bitten by a craze for early-flowering rhododendrons lets himself in for more anxiety and vexation than are incident to the cultivation of any other family of hardy plants, lilies only excepted. So ran my troubled thoughts when, on this morning of 16th April 1920, I looked forth at 7 A.M. (summer time, a grim pleasantry?) upon a lawn as white as 'the lyart locks o' Harden's hair.' A winter of unequalled mildness, followed by a weeping March, had stimulated growth and brought out such a 'flourish'—to use a Scots term for blossom[1]—on early rhododendrons as I have never seen before. The display was gorgeous on *R. arboreum, barbatum, neriiflorum, campanulatum, Thomsoni*, and its numerous flaming hybrids. Five degrees of frost, registered on a shaded thermometer, sufficed to turn this feast of colour to ashes. Not the least vexatious part of the mischief is that it was all wrought in four or five hours. A friendly cloud would have warded it off, and in fact no sooner was the ruin accomplished

[1] Probably, like many Scots expressions, a loan word from the French—*fleuraison*.

than the wind backed into the south-west, bringing warmth and abundant rain.

Luckily, a few days before this devastation I had a stroll through the Earl of Stair's grounds at Castle Kennedy. Mr. J. G. Millais has recorded in his great work on rhododendrons how the late Sir Joseph Hooker paid a visit to the present earl's grandfather more than seventy years ago, and persuaded him to take advantage of the mild western climate to plant some Himalayan rhododendrons in a pinetum of 70 acres which was in process of being laid out. Sir Joseph, lately returned from his memorable travels in North-West India, provided seed, chiefly of *R. arboreum*, *campanulatum* and *niveum*; the very rare species *Batemanni* and *nobile* seem from their size to date from the same period, and there are a few specimens of *barbatum* and *fulgens*. An immense number of plants were raised from the seed supplied, and were set out along the broad avenues intersecting the blocks of young conifers, which as they grew up afforded shelter from searching winds, which is the chief enemy to rhododendrons on that seaboard. The pinetum at Castle Kennedy, occupying an elevated isthmus between two large fresh-water lakes, lies much exposed to gales from almost every quarter.

The collection of rhododendrons is remarkable, not for much variety of species, but for the age and quantity of such species as are represented. I know not elsewhere of such abundance of *R. arboreum*. They stand there in hundreds, many of them measuring from 18 to 21 feet in height. There is a preponderance of white-flowered varieties among these old plants;

none of the blood-red, but very many passing through carmine to shades of rose and pink. The splendour of these trees as I saw them on 12th April loaded with blossom, so that on many of them hardly any foliage was visible, was worth taking a long journey to enjoy.

In 1916 I made some measurements of other species, finding *R. barbatum* 17 feet high, *R. campanulatum* 20 feet 5 inches, *R. nobile* 17 feet 4 inches, *R. Batemanni* 17 feet with four stems, one of which girthed 32 inches, and *R. niveum* 16½ feet.

It is unfortunate that when these rhododendrons were planted, little was known about the behaviour of the Indian species in Scotland or the dimensions they might attain. Consequently there is serious congestion in several parts of the grounds; what might have developed into splendid specimens have, in many cases, been crowded and crushed into leggy stems with a crown of foliage and flower far above eye-level. The present earl, an enthusiastic lover of the genus, has to tackle many an excruciating problem in deciding what to sacrifice in order to restore light and air to plants that are to remain.

The chief idiosyncrasies of the genus Rhododendron have long been recognised as impatience of drought and scorching winds and invincible hatred of lime in the soil. The first of these characteristics is easily understood, seeing that the habit of these plants is to make a dense mass of roots close under the surface of the ground. If, therefore, the surface is not protected from the sun and wind by a natural or applied shield of withered leaves or leaf-mould, the plants can never do

themselves justice or develop proper luxuriance, and in seasons of exceptional drought many will perish. But it came as a great surprise to those who had given attention to cultivating rhododendrons, when Mr. Wilson, Mr. Forrest, and the late Mr. Farrer announced that in their exploration of Western China many of the finest species which they discovered there were not only growing above a limestone formation, but actually had their roots thrust into crevices of limestone rocks or spread among limestone débris. It must be confessed that the earlier reports of these intrepid explorers met with considerable incredulity; but the facts are now established beyond doubt by the testimony of these experienced witnesses, and have opened an avenue which is likely to lead to a notable advance in botanical biology.

It has been known by botanists for a considerable time that plants of the Heath family, to which rhododendrons belong, depend for the extraction of nitrogen from the soil upon the services of a fungus which envelops and penetrates their roots, creating a mycorrhiza. It seems probable, though the problem awaits further research, that lime is not directly inimical to rhododendrons, but indirectly so, because it destroys or arrests the functions of the fungus, without which the plant cannot draw nourishment from the soil. Mr. Forrest has discovered that the leaves of rhododendrons growing on limestone have their under-surface coated and penetrated by fungus mycelium, which, forming a mycophyllum, draws free nitrogen from the atmosphere to supply the plant, instead of a mycorrhiza drawing

fixed nitrogen from the soil. That, at least, is the suggestion from the peculiarity of rhododendrons growing on limestone, pointing to the fungus being unable to thrive in contact with lime, having transferred itself to the foliage where it may function freely. Similarly, the impatience of drought shown by rhododendrons may in reality arise from the failure of the symbiotic fungus to survive severe desiccation.

XVI

The Colours of Flowers

A correspondent of one of the horticultural journals recently (1920) asked for explanation of the preponderance of white and yellow in the blossoms of early flowering British herbs, thereby touching the fringe of a subject which has attracted research by many botanists, and contains a problem far too profound to be considered at length in these casual pages. Nevertheless it is one which must often present itself to any one who gives more than superficial attention to vegetation, and lovers of flowers may care to note the main conclusion to which research in this matter is tending.

First, it may be remarked that the inquiry above referred to was limited to the colours of early flowering British herbs, in the flowers whereof he assumes that white and yellow prevail over all other hues. But is that assumption correct? In a country like Great Britain, which has been for so long extensively cultivated, the native flora has been much displaced and expelled from many tracts where once it flourished.

Among weeds of cultivation which, though now they abound, cannot have been conspicuous in the primitive British landscapes, may be mentioned dandelions, wild mustard or charlock (a native of Southern Europe), and buttercups, which now gild our meadows, but had not much innings before the meadows were reclaimed from waste. All these have yellow flowers; so have primroses and cowslips, with many others that might be named. If the survey is extended to include trees and shrubs, gorse and broom are lavish of their gold, and hedges are sheeted late in spring with drifts of snowy May.[1] But it would take more than these to convince me that white and yellow prevail over other colours in our native spring flowers. Have we not the intense magenta of the early orchis (*Orchis mascula*), the matchless blue of the vernal gentian, purple Pasque flowers on the chalk downs, the paler periwinkle, and the azure speedwell?

> 'Violets dim,
> But sweeter than the lids of Juno's eyes,
> Or Cytherea's breath?'

And does not the wild hyacinth still spread mists of blue over hundreds of acres in almost every country? while certain meadows in the Midlands teem with sober-suited fritillaries?

But it is evident, I think, that in making his inquiry

[1] Driving through Long Island on a May morning in company with the late Joseph Choate to lunch with the late Theodore Roosevelt of Sagamore Hill, I remarked on the beauty of the blossom of Cornus Florida, which forms the chief undergrowth of the woods. 'Yes,' replied Choate, 'it is very fine; but, to my mind, it cannot compare with your English hawthorn bloom.'

the correspondent had in view a number of plants which are grown in British grounds and gardens, but are not indigenous. I was out hunting with the Cottesmore hounds on a dark day in a now distant January, and shall not forget the delightful surprise I felt on entering a hollow wood at Stocken Hall. Far as the eye could reach among the tree stems, the ground was thickly carpeted with the yellow bloom of winter aconite (*Eranthis hyemalis*). But that is not a British native: it is a naturalised alien, and a very welcome one. So also with daffodils and snowdrops, which spread sheets of yellow and white in our fields and woodlands; even if the first is indigenous in some of the southern English counties (which is not certain), the snowdrop must be reckoned exotic. On the whole, therefore, although perhaps a case can be made out for the preponderance of white and yellow among our native spring flowers, and, indeed, among those of summer and autumn, it does not seem to be peculiar to the British Isles.

This inquiry about the colours of spring flowers in Great Britain leads one naturally to speculate on the origin of the colours of flowers in general, independently of seasons. The late Mr. Grant Allen discussed it in his interesting treatise on *The Colours of Flowers*,[1] and although he deals only with plants native or naturalised in Great Britain, and indulges occasionally in what strikes one as special pleading, the little book deserves a niche in the library of every good amateur.

As regards Angiosperms (that is, plants with seeds

[1] Nature Series, 1891.

enclosed in a pericarp or envelope), which include the vast majority of flowering plants, Mr. Allen differed from the view which, at the time he wrote, was generally accepted by evolutionists, namely, that flowers with green corollas were the most primitive, and that other colours were developed as a change from green. He suggested, that, on the contrary, green corollas had lost their original colour through degeneration. But he agreed with other phyto-biologists in tracing the origin of the more or less showy flowers of Angiosperms to the more primitive bloom of Gymnosperms (that is, plants bearing naked seeds as do conifers, cycads, and a few others). The flowers of such plants have no corollas, and are mostly composed of green or greenish scales or leaves. Upon this theory Professor G. Henslow comments thus:—

'When we remember that the spore-cases and spores of *Lycopodium*, the anther-cells of *Cupressus*, the whole anther-scale of *Pinus*, and all the pollens of Gymnosperms are yellow; again, when we come to Dicotyledons and find the prevailing tints of stamens is the same, we gather probabilities in support of that view.'[1]

Assuming, then, as may be pretty safely done, that the petal is an altered stamen,[2] and that the all but universal, or at all events the largely predominant, colour of stamens is yellow, it seems probable that the original colour of all, or nearly all, petals was yellow. Allen and Henslow agree in opinion that the next colour to be developed was red, and thence through

[1] *The Structure of Flowers*, p. 179 (1888).

[2] Altered bracts or leaves do not develop into petals but into coloured calyces or involucres.

purple to blue, pure blue being the rarest of all colours in flowers, nearly all blue corollas containing a tinge of red. This sequence may be observed in those flowers which pass through several colours in the course of blooming, as do so many of the Borage family, *e.g.* viper's bugloss, lungwort, and forget-me-not. An extreme case is the little annual *Myosotis versicolor*, whereof the flowers open pale yellow, become pink, and pass off blue.

All this, however, does not account for the production of white flowers, which probably outnumber those of any other hue. Mr. Allen surmised that the most primitive form of petalled flower is that in which 'the carpels exist in a separate form, instead of being united in a single compound ovary.' In such flowers, whereof he took the common cinquefoil or *Potentilla reptans* as a type, he considered that the original hue was yellow; but that as plants somewhat higher in the scale were evolved, there was a tendency towards white and pink blossoms, as in the strawberry and the rose. Account must also be taken of the tendency of very many coloured species to produce white 'sports.' White flowers are more conspicuous than any others; any approach to white in a blossom would attract insect visitors even more surely than the primitive yellow or the more advanced red, thereby securing the fertilisation of a preponderance of white or pale flowers, and the establishment of a white-flowering race in substitution for or addition to the ancestral colour. One is accustomed to assume that the red-flowered hawthorn —*i.e* the natural variety, not the outcome of the

florist's manipulation such as Paul's Scarlet—represents a sport or evolution from the original white, and so it probably is; but if the foregoing observations are anywhere near the mark, the converse may possibly be the true sequence, white flowers supplanting the red owing to their being more conspicuous and attracting more frequent visits from flying insects, thereby securing more complete fertilisation.

XVII

A song for Salmon-fishers

I was a very young salmon-fisher when I cut the following lines out of the *Scotsman* newspaper in December 1867. Coming upon them lately by chance, it seemed to me that although anonymous they deserved something kindlier than oblivion; wherefore I appealed to my friend Mr. J. P. Croal, present editor of the *Scotsman*, who has been good enough to hunt through the records of his journal, and elicited the poet's name and the occasion of the poem.

The Æsculapian Club was founded in 1783 by Dr. Andrew Duncan, Professor of Medicine in Edinburgh University, the members being elected from the Colleges of Physicians and Surgeons. As I understand that it still flourishes, it is probably the most ancient convivial society in Edinburgh,[1] the original custom of frequently

[1] Two other medical clubs exist in Edinburgh—the Harveian and the Medico-Chirurgical, but I do not know the date of their foundation. The Edinburgh Burgess Golfing Society, founded in 1735, the Honourable Company of Edinburgh Golfers, founded before 1744, and the

meeting to sup together, having resolved itself into an annual dinner. At one of these dinners in 1867 the verses printed below were sung or recited by the composer, the late Sir Douglas Maclagan, Professor of Medical Jurisprudence in the University of Edinburgh, and I venture to offer them, as Izaak Walton did his craftily cooked pike, as being 'tòo good for any but anglers or very honest men,' for they are not bad lines to have running in one's head when he goes a-fishing.

SAUMON

TUNE—*There's cauld kail in Aberdeen.*

There 's haddies in the Firth o' Forth,
There 's turbot great and sma', man ;
There 's flukes, but they 're but little worth,
There 's caller ou'[1] and a', man.
But fish in shell or fish in scale,
Whate 'er ye like 't to ca', man,
There 's nane can doot the very wale[2]
O' fishes is the saumon.

There 's herrin' catcht aboot Dunbar,
And whitin's aff Skateraw, man ;
But wha sae daft as would compare
The like o' them wi' saumon ?
The English folk like whitin's best,
The Dutch eat herrin's raw, man ;
But ilka body to his taste,
And mine 's content wi' saumon.

Royal and Ancient St. Andrews Golf Club, founded in 1754, are all of higher antiquity than the Æsculapian, but their purpose, of course, was not primarily convivial.

[1] *Caller ou'*, fresh oysters, the musical cry of Musselburgh fishwives. 'Caller herrin', caller ou',' is not heard so often as of yore in the streets of Edinburgh.

[2] *The very wale*, that is, the choicest—the pick o' the basket.

O ! mark him rinnin' frae the tide,
In blue and silver braw, man ;
The ticks upon his gawsy [1] side
Shew him a new-rin saumon.
And though he 'scape the Berwick net,
The Duke at Floors [2] an' a', man,
There 's mony a chance remainin' yet
To catch that bonnie saumon.

Across the pool the fisher's flee
Fa's light as might a straw, man,
Soops [3] doon the stream, and syne a wee [4]
Hangs trem'lin o'er the saumon.
A moment mair ! the line is stent,[5]
A rug,[6] and then a draw, man ;
And now the soople tap-piece bent—
He 's taigled wi' his saumon.

Frae aff the birling [7] reel the line
Like lichtnin' spins awa', man ;
The fisher lauchs, for he kens fine
He 's heuked a guidly saumon.
He 's up—he 's doon, he 's here—he 's there
Wi' mony a twist and thraw,[8] man ;
Noo deep in Tweed, noo in the air,
My troth ! a lively saumon.

But stren'th and nature for a while
Can warstle [9] against a', man ;
Yet nature aft maun yield to guile,
As weel in man as saumon.
And sae the merry fish that rose
To tak' that flee sae braw, man,
Noo sidelins [10] sooms at his life's close,
A worn and deein' saumon.

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[1] *Gawsy*, plump, well-fed.

[2] The Duke of Roxburghe, whose fishings on the Tweed at Floors contain some of the best casts on that river.

[3] *Soops*, sweeps. [4] *Syne a wee*, in a short time. [5] *Stent*, taut.

[6] *A rug*, a tug. [7] *Birling*, whirling. [8] *Thraw*, a wrench.

[9] *Warstle*, to wrestle or struggle.

[10] *Sidelins*, sideways, broadside on.

Wi' ready gaff the callant[1] stan's,
The fish ashore to draw, man ;
The fisher bids him hauld his han's,
And no to hash[2] the saumon.
'He 's clean done oot : gae grup the tail,
Just whaur it tapers sma', man ;
And land him up, baith safe and hale[3]—
My word ! a bonnie saumon.'

'Gae bid the lass set on the pat,
And see it 's not ower sma', man,
And pit twa gowpens in o' saut,[4]
To boil my bonnie saumon ;
And send for Jock and Rab and Tam—
They 're fishers ane and a', man,
And bid them come to me at hame,
An' eat my bonnie saumon.'

The gentry get their cooks frae France,
Wi' mony a queer kickshaw, man,
But, haith ! I wadna tak' their chance
When I hae sic a saumon.
Wi' it, and some o' Scotland's best,
A cheerer—maybe twa, man,
We 'll gang like decent folk to rest,
And dream o' catchin' saumon.

Ance I was dining in the toon,
Whaur a' things is sae brae, man,
And there I saw a Lunnon loon
Eat lobster sauce wi' saumon.
Wae 's me that sic a slaister[5] should
Gang into mortal maw, man !
To fyle[6] the stamach—spile the food—
And siccan[7] food as saumon !

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[1] *Callant*, a lad. [2] *Hash*, to disfigure. [3] *Hale*, whole.
[4] *Twa gowpens o' saut*, two double handsful of salt.
[5] *Slaister*, nasty mess. [6] *To fyle*, to defile, pollute.
[7] *Siccan*, such.

Wi' flesh as pink as rose in June,
And curd as white as snaw, man,
And sappy bree they boiled him in—
Oh, *that's* what I ca' saumon.
To best of friends I canna wish
That better should befa', man,
Than juist to hae as guid a dish
As we hae wi' our saumon.

To Scotland's ilka honest son,
Her dochters fair and a,' man,
To a' that lo'es the rod and gun,
We 'll drink and cry hurrah ! man.
Let them frae mony sporting days
Baith health and pleasure draw, man ;
May muircocks craw on a' the braes,
The rivers swarm wi' saumon !

On the Helmsdale. Netting fish for the hatchery

May

XVIII

I FIND the following in an old note-book: 'It was a favourite saying of Dr. Alexander Ross that, as sunshine of years long bygone is stored up in coal-measures, so past enjoyment should be garnered in the soul as a source of warmth and light in dark days.' Who Dr. Ross may have been I cannot now guess; but his metaphor is just, and applies to no reminiscence more aptly than to that of an old angler. Let me jot down in this snug armchair by the fireside a few incidents that rise in retrospect upon days by the waterside.

Waterside Memories

Of those who were Eton boys in 1860, some survivors may remember the adventure of a small boy named Jodrell with a big trout, resulting in the most singular capture that I have known. A little above the Playing Fields a mill-stream flows into the Thames on the left bank, and just at the junction there was in those days a brick arch through which a large drain discharged sewage from the college. No doubt the Thames Conservancy Board have caused that primitive arrangement to be changed; but so long as it remained, this unsavoury affluent often attracted a large trout to make it his hunting-ground. One day Jodrell, who, although

in Remove, was a very small fellow for his years, was fishing for gudgeon, bleak, or other humble quarry, with one of those light lines wound, with a brightly painted float, on a piece of split bamboo that we used to buy from a tackle shop 'up town.' He had, of course, no reel; the line was tied to the top ring of a cheap rod. His companion, Street, a big hulking fellow 'in tails,' was not fishing, and at first was only an idle spectator and critic. Just as the two lads arrived opposite the mouth of the sewer, a wave shot across the slack water, scattering the small fry which jumped out of the stream in terror, and splash went a broad tail as a mighty trout turned with a bleak across his jaws.

'I'll try him with another,' quoth little Jodrell, and fastening a dead bleak to his perch hook, he flung it across the narrow stream to the deep hole on the far side. Nine hundred and ninety-nine chances against the monster taking any notice of it, and any odds you like against the frail tackle holding him if he did. But there was the thousandth chance, and it came off! the big trout came on and nearly dragged the gimcrack rod out of the fisher's hands. But he held on gamely, and before either fish or fisher had recovered the surprise, lo! the former was wallowing in the shallow on the hither side of the stream. In dashed Street, flung himself flat upon the trout, grasped it in his arms and, struggling up the bank, flung the glittering prize (Thames trout do indeed glitter) high and dry on the grass. The whole affair, from find to finish, lasted less than a minute, and a lusty Thames trout of 9 lb. honest

weight had been landed by fair fishing in as short time as would be required to bag a four-ounce roach.

I have never met Jodrell since we left Eton, nor do I know whether his subsequent career as an angler was maintained at the high level of its outset. There was a considerable element of fluke in the exploit; but credit is due to the angler for not having followed Izaak Walton's counsel of despair for dealing with a heavy fish. After 'a great old trout,' which was 'both subtle and fearful,' had smashed Venator's line by 'running to the rod's end,' he addressed his pupil thus:

'I would have held him within the bent of my rod, unless he had been fellow to the great trout that is near an ell long, which was of such a length and depth that he had his picture drawn, and now is to be seen at mine host Rickabie's, at the George in Ware; and it may be, by giving that very great trout the rod—that is, by casting it to him in the water—I might have caught him at the long run; for so I always use to do when I meet with an overgrown fish; and you will learn to do so too hereafter, for I tell you, scholar, fishing is an art, or at least it is an art to catch fish.'

If Izaak ever saw a reel, it never occurred to him to use one for circumventing an 'overgrown fish'; indeed the following passage suggests that he was writing only from hearsay, for he was no salmon-fisher:

'Note also that many use to fish for a salmon with a ring of wire on the top of their rod, through which the line may run to as great a length as is needful when he is hooked. And to that end some use a wheel about the middle of their rod or near their hand, which is to be observed better by seeing one of them than by a large demonstration of words.'

Jodrell's feat was due to the trout having in its first

spasm of terror run aground in the shallow; but there is no doubt that, if an angler has nerve for it, force promptly applied may surprise a fish of considerable weight into capture before it can get fairly under way. One of the best salmon-fishers I ever knew (he is now on the far side of the bourne) used to set me an example which I have never had the nerve to follow. In the river which I often fished in his company there was usually a good run of grilse in July. My friend had little patience with them; so soon as he hooked one, changing his hand, he hauled the fish within reach of a long gaff, carried by his gillie. The mouths of grilse are soft, and no doubt he lost some fish through rough handling that might have been landed if played in the orthodox way; but lightly hooked fish lightly dealt with often break away in the end, and a short shrift with grilse is most likely to contribute weight to the bag.

The shortest successful struggle I ever had with a heavy salmon took place in the Water of Luce. Sea-trout abound in that stream, wherefore it is the practice to fish with a small bob-fly to attract them, and a larger tail-fly for *Salmo salar*. I had no gillie on this occasion, and on fishing down the Abbey pool I hooked a salmon that behaved in a very unusual manner. He never went below the surface, but tore up to the head of the stream with his back out of the water, turned down stream in the same manner, landed on a flat rock that was half awash in the middle of the river, lay there wallowing for a moment or two, kicked himself off and dashed in upon the shingle at my feet. I slipped the gaff into him—a male fish of 23 lb.—the whole affair

being over in three minutes. The cause of the strange behaviour of this fish was then revealed: he had taken the bob-fly, and the tail-fly had imbedded itself just in front of the anal fin.

Mention of a reel in salmon-fishing brings to mind a tragi-comedy enacted in the summer of 1902 in the Logen, usually known as the Sand river because it enters the sea near the village of Sand in the Sands Fjord. Our party consisted of three rods—my host, who was an experienced salmon-fisher, B——, who was making his first essay in the craft, and myself. The Logen is a river of about the same volume (in summer) as the Tay. Three or four hundred yards above the tide it plunges over the Sand Forss, a splendid cascade, less obstacle than it looks to the ascent of salmon. Between the forss and the sea lies the Aasen pool, a reach of broad, deep water with a tidy current through it, a noted resting-place for heavy fish. It is not good water for the fly, the fish lying too deep. Personally, having no skill with any lure except the fly, I only killed two salmon in Aasen during my visit, although it was swarming with large fish; but my companions did much execution there with the prawn.

B——, though a neophyte, had a very effective outfit of brand new tackle—split-cane rods of the shiniest, deep-bosomed reels, and japanned-tin boxes stored with almost every imaginable device for the deception of salmon. On the first day that his beat was on Aasen, he mounted a prawn, and was taken in the usual manner of fishing that pool in a boat along the left bank. He had not gone very far before he was into a

fish. As I did not witness the performance, I can only recount what followed in outline, though it is easy to imagine that a new hand at the game soon lost control over a heavy Norwegian salmon. Anyhow, the fish took out as much line as it had a mind for, bolting straight down the whole length of Aasen pool and out into the fjord. There was nothing unusual in this, forasmuch as salmon hooked below the forss sometimes make their way back into the sea, and are as readily killed in salt water as in fresh. But this fish had travelled rather faster than the boat could follow, and B——'s line was nearly all run out. A little later, it was *all* out, and as unluckily it had not been knotted to the drum of the reel, B—— was left with a rod and a reel, *minus* 150 yards of line. His next adventure in that pool began in the same way. He had fitted up another line as long and strong as the lost one, and hooked another heavy fish which took him out to sea like the first. There it lay down, or appeared to do so, for the united efforts of B—— and the boatman failed to budge it. They spent, I daresay, half an hour trying every conceivable device, but all in vain. It must surely, they thought, be a resolute monster to resist the pressure which B——, a powerful fellow, brought to bear; and the thought made him very keen to bring the fish to land, for forty-pounders were not uncommon in Aasen. At last, determined either to move the fish or break the tackle, he began to wind in the line with a firm hand. Ha! the salmon at last gave a kick; another, and another. The fjord was deep, but the line was shortening steadily, and presently the fish must

show near the surface. The kicks went on at intervals, but there was nothing in the nature of a run by this sullen creature. What——? The surface was broken, not by a fish, but by a coil of barbed wire! The salmon had run through the coil, leaving the hooks fixed in it, and the 'kicks' were the result of the wire uncoiling as it was dragged to the surface.

One more yarn, and a brief one. At the foot of a rocky glen a west country burn brawls over the shingle into the bay. Here there are two or three pools, varying from time to time in breadth and length and depth according as waves and tide shift the shingle. To-day there may be three or four feet of water, ample holding for a fresh-run sea-trout, or for brook trout that often descend below high tide-mark to batten on marine delicacies. Next week, after a gale, the same pool may be filled with many tons of gravel, when the angler, after keeping scrupulously out of sight, and fishing it delicately, finds that he has been whipping a film of water six inches deep. To this pool I descended one bright summer day, with three or four pounds of fat, pink-fleshed little trout in my bag, killed above the fall. Just as the tail-fly swept past a boulder on the far side of the stream—pluck! a fish was fast, and a good one too, judging from the dead pull on the cast. A sea-trout, methought; yet was there something queer in its behaviour. It neither dived nor plunged, only kept on a strain as heavy as the very fine gut cast would bear. I drew the fish steadily towards the shelving bank, expecting every moment the frenzied rush with which a trout, sea or brook, meets such a

manœuvre—drew it against the side, drew again, till out upon the hot stones came my prey, and then began a proper dance. It was an eel, and a small one at that. Having accomplished what must be reckoned a rare feat —killing an eel on an artificial fly—please the pigs I may never repeat it! for the mess to which that slimy little creature reduced the casting line could only be treated with a knife.

Avast! there is no measure in an old fisherman's garrulity, but there are limits to the patience of his hearers.

XIX

Fresh Light upon the Cuckoo

If Agur the son of Jakeh had made a thoroughly clean breast of it when he confessed that three things were too wonderful for him, yea four that he knew not, he must assuredly have added a fifth, namely, the way of a cuckoo with its egg, for that has baffled all attempts at elucidation until the present year of grace. Hitherto, little more of the mystery has been known to ornithologists than the bare fact of the fraud whereby the female cuckoo contrived to lay a single egg in each of several nests of different species of bird; that the young cuckoo, having been hatched under its unconscious foster-mother, proceeded to eject the legitimate brood one after another from their lawful nursery; and that the bereaved parents, far from showing resentment at the outrage, housed and fed the intruder with utmost care and diligence. That much in itself, were no more to be known of the details, forms a remarkable chronicle of

crime, perpetrated year after year with impunity. That the details have at last been unravelled is a fresh instance of the necessity for patient observation and rigid concentration upon some specific branch of research, whereby alone any advance can be achieved in the field of science. Such advance has been accomplished lately by Mr. Edgar Chance, who during the last four years has acted as private detective on the nefarious proceedings of the cuckoo.

Beginning his study in the spring of 1918, Mr. Chance had satisfied himself by the end of the summer of 1919 that, whereas most birds lay an egg each day till the appointed number is complete, the female cuckoo lays only on alternate days. Further observation in 1920 proved that, while most birds lay early in the morning, the cuckoo prefers the afternoon. Concentrating observation upon a single cuckoo, he found after she had laid eleven eggs, that he could calculate precisely when the next would be laid, and he actually witnessed the laying of nine more eggs, making the astonishing total of twenty eggs laid by this most unmotherly of mothers in a single season. Hitherto it had been understood that the cuckoo laid her egg on the ground, and then carried it in her beak to deposit it in the nest she had chosen. In the summer of 1921 Mr. Chance secured photographic evidence that the bird's procedure was after another manner. In May of that year the same cuckoo as he had had under observation in the previous three seasons returned for the fourth time to the scene of her former activity, and on the 12th of the month laid her first egg in the presence of Mr. Chance and two

other witnesses. Experience already gained enabled him to calculate that the next egg would be laid forty-eight hours later, and he was able by skilful artifice to obtain cinematographic films of the bird in the act of laying her third, fourth, twelfth, thirteenth and fourteenth eggs, all in different nests of meadow-pipits and titlarks, which build on the ground.

Mr. Chance's series of films were exhibited at a meeting of the Zoological Society's scientific committee on 8th November 1921. The record showed how the cuckoo took up a position on a tree, whence she could see the nest, or the site thereof, wherein she intended to lay, often sitting motionless for hours before suddenly sailing down to it. She then seated herself on the nest, laid her own egg in less than ten seconds, seized one of the other bird's eggs in her beak, backed carefully out of the nest, and flew back to her tree, where she proceeded to eat the stolen egg. Mr. Chance was not the only witness of these burglarious acts. The films showed how the owners and architects of the nest were present at the violation of their home, fluttering round in agitation as vain as it was vehement. But the cruelest act in the tragedy is shown in later films, taken close up to the nest. In these the young cuckoo, when only two or three days old, is seen in the act of ejecting the legitimate nestlings from their nursery, as well as any egg that remains unhatched or addled; surely one of the strangest examples of precocious instinct that can be imagined. Equally perplexing to our understanding is the behaviour of the foster-parents. All their angry fluttering and scolding

ceases so soon as the foreign egg is laid. They show philosophic indifference to the fate of their own offspring, bestowing their whole care on the nourishment and welfare of the youthful parasite. One of the films shows how the young cuckoo, having hoisted one of its foster-brothers upon its back, succeeded in raising it over the edge of the nest, where it remained caught upon a twig. The mother pipit returning, replaced her own young one in the nest, fed it and the young cuckoo, and then brooded both together. So soon as she flew off to fetch more food, the crafty alien resumed his villainy, and cast out not only the nestling that had been replaced in the nursery, but another foster-brother as well. He then had the whole nest to himself, and monopolised the attention of his foster-parents.

Mr. Chance must be warmly congratulated upon the success which has crowned his skill and patience in elucidating all the details of this sinister drama. The cuckoo which he ascertained to have laid twenty eggs in a single season must have been the direct agent in the untimely death of between sixty and eighty young pipits and titlarks.

XX

In some of the statements professing discrimination between birds injurious to agriculture and horticulture and those which are beneficial, the chaffinch is placed in the black list. Now to the character of most of the small birds frequenting our gardens (the robin, the wren, the goldfinch, and all the warblers excepted) one may justly apply the sage

The Chaffinch

reflection upon human nature pronounced by the First Lord in *All's Well that Ends Well*—'The web of our life is of a mingled yarn, good and ill together. Our virtues would be proud if our faults whipped them not, and our crimes would despair if they were not cherished by our virtues.' Be the crimes of the chaffinch what they may, this cheerful little bird pursues one industry so sedulously as to win grateful regard from me as an amateur gardener. He treats young groundsel as a delicacy. In spring, when that truly irrepressible weed shoots from the ground in myriads, chaffinches are ever busy in our borders, nibbling the young green of groundsel close down to the ground. It is true that the roots are left to spring again when chaffinches are intent upon other fare, but the seeding of the groundsel is delayed, giving time for the hoe to be plied for its extermination. Presently, towards the middle of June, the wood forget-me-not (*Myosotis sylvatica*), which takes possession of wide spaces in our borders, will ripen its seed, beloved of goldfinches, and we shall enjoy seeing them, brightest and best of British finches, fluttering incessantly in the tangle.

When Linnæus christened the chaffinch *Fringilla cœlebs*—the celibate finch—he prepared a puzzle for British observers, to whom the bird is most familiarly known as a pattern of matrimonial fidelity and a consummate nursery architect. The specific name conferred on this species by Linnæus was suggested by the habit which chaffinches follow in Scandinavia (and to a less extent in the northern parts of Britain), namely, that which causes the cock and hen birds to gather

into separate flocks during the winter. Linnæus considered that in Sweden the hens migrated southward in autumn, leaving the cocks behind them till the following spring; but subsequent observation has not tended to confirm this movement as invariable.

The mention of groundsel brings to mind the deceptive change which occurred in that word between the eighth and the tenth centuries. Every one who has made acquaintance with the two volumes entitled *Saxon Leechdoms*, edited for the 'Master of the Rolls' Series by the Reverend Oswald Cockayne, must be aware of the immense variety of vegetable, mineral, and animal substances prescribed in primitive times for the remedy of human ailments. Some of the animal ingredients recommended are disgusting, and their prescription is sheer quackery; but the early leeches certainly had discovered or acquired knowledge of the virtues of certain herbs, which retain their place in the Pharmacopœia to this day. Groundsel is one of those which have dropped out of use. Whether it has any medicinal properties or not, I neither know nor care; I am concerned just now only with the history of the name. In the Saxon work above referred to it is called *grunde-swilege*, which was understood to mean, not inappropriately, 'ground-swallower.' It was prescribed for use in decoction for reducing inflammation, especially of the eyes, and absorbing purulent discharges. When the name came under inexorable analysis by the late Professor Skeat, he pointed out that in Anglo-Saxon the word for 'ground' was not *grunde* but *grund*—a monosyllable instead of a dis-

syllable.[1] Pursuing this clue, he discovered that in the eighth century, two hundred years before the Saxon *Leech-book* was compiled, the name of this plant was written *gunde-swilge*, showing that the *r* in the first syllable had got itself inserted because the common folk knew how quickly this weed spread over—swallowed—cultivated ground; but the real meaning was 'matter-swallower,' *gund* being the term for a disease of the eye—ophthalmia. One is reminded of another instance of an intrusive *r*, namely the conversion of Ptolemy's *Ebudæ* into 'Hebrides,' through a copyist mistaking the vowel *u* for *ri*, which easily happened before the vowel *i* became distinguished in the eleventh century by the dot which now surmounts it.

XXI

Eryngo and Eruca

It is a rare, and in my experience an unique, thing to detect inaccuracy in the writings of my old friend and correspondent, Canon Henry Ellacombe; for not only was his knowledge in botany and horticulture encyclopædic, but he was also an enthusiast both in classical and English literature. If I lay finger upon a single and singular slip in his well-known work *The Plant-lore and Garden-craft of Shakespeare*, it is from no lack of affectionate regard for his memory, but because that slip leads up to the misreading of a name for which he was in no degree

[1] The distinction may seem a trivial one, but mark the difference in sense between 'Hun' and 'honey,' 'bun' and 'bunny.'

responsible, and which it is surprising that so erudite a botanist should not have detected.

In the volume aforesaid Canon Ellacombe quotes under the head of 'Eringoes' Falstaff's petition on meeting Mrs. Ford and Mrs. Page in Windsor Park:—

'Let the sky rain potatoes; let it thunder to the tune of Green Sleeves, hail kissing-comfits and snow eringoes.'

Merry Wives, Act v. Sc. 5.

After noting that Gerard explains 'eringoes' as the candied roots of the sea-holly (*Eryngium maritimum*) the learned Canon proceeds:—

'I am inclined to think that the vegetable Falstaff wished for was the globe artichoke, which is a near relative of the eryngium, was a favourite diet in Shakespeare's time, and was reputed to have special virtues which are not attributed to the sea-holly, but which would more accord with Falstaff's character.'

Now in this paragraph there is not only a slip in botany, for the globe artichoke (*Cynara scolymus*) and the sea-holly are far from being nearly akin, the first belonging to the *Compositæ* or Daisy Order and the second to the *Umbelliferæ* or Hemlock Order; but the author misses the point of Falstaff's wish for 'eringoes' as incentive to amativeness. Whether Shakespeare in writing of potatoes had in view the tubers of *Convolvulus batatas*, which had been known as esculent in Europe and called Spanish potatoes long before *The Merry Wives of Windsor* was published in 1598, or what we now know as potatoes—tubers of *Solanum tuberosum*—which are supposed to have been first grown in Ireland by Sir Walter Raleigh in 1584, both

these plants were believed to possess aphrodisiac properties. The sea-holly found its way into the same category of stimulants by sheer accident, and it seems possible that the mistake that caused it arose with Shakespeare or his contemporaries. It is certain that eryngo acquired its reputation through being confounded with a cruciferous plant bearing the somewhat similar name *Eruca*. The N.E.D. gives Falstaff's speech above quoted as the earliest occurrence of 'eringo' in English literature.

Pliny, discoursing of *Erynge sive Eryngion*,[1] mentions it as an effective remedy against the venom of snakes and other poisons, but has not a word to say about it as an aphrodisiac, which he would assuredly have done had it been so accounted in popular leechcraft or folk-lore, for he was utterly uncritical in recording current beliefs in the properties of herbs. Nor do I know of any other Latin or Greek writer who attributes that quality to the sea-holly. Pliny, however, in the next chapter[2] describes a plant he calls *Centum capita*, and repeats what he has heard reported about it as *portentosum*—marvellous, namely, that if a man finds the root thereof, it acts as a powerful charm in his favour with women. He goes on to recommend a decoction of the root, not as an aphrodisiac, but as a remedy for sundry maladies of the heart, stomach, and liver. On the other hand, he writes confidently of *Eruca* as *concitatrix veneris*,[3] and allusions to that plant (now known to botanists as *Eruca sativa*) occur

[1] *Nat. Hist.*, pars. I. lib. xxii. cap. 7.
[2] *Ibid.*, xxii. cap. 8.
[3] *Ibid.*, xix. cap. 8.

in many classical writings. Ovid mentions it in his *Remedium amoris* as food to be avoided:—

'Nec minus erucas aptum est vitare salaces.'

Martial recommends its use as a spur to sluggish husbands:—

'Concitat ad Venerem tardos eruca maritos—'

and Columella advises that it be sown near the effigy of Priapus in gardens. It is clear, therefore, that whether Shakespeare or some one else was responsible for the mistaken name, Falstaff ought to have invoked a shower of 'erucas' instead of 'eringoes.' After all, the matter is only of literary interest. The prescription in either case is empirical—that is quack; and neither benefit nor injury would ensue to anybody who should be simpleton enough to follow it.

It can never now be ascertained whether Shakespeare, in causing Falstaff to invoke the sky to rain potatoes, had in view the Spanish potato (*Convolvulus batatas*), or the plant which Gerard grew in his garden as a curiosity in 1597 (the year before the publication of the *Merry Wives*). The question is of slightest importance, but it serves to remind one of what is very easily forgotten, namely how relatively recent is European esteem for the potato as an esculent. We have grown to regard potatoes in one form or another as not less indispensable at dinner than the teapot at breakfast; yet for a full century after its introduction to this country the potato was regarded and grown only on account of its supposed restorative powers as a stimulant drug. It is mentioned in Mortimer's *Gardener's Kalendar* for

1708 as resembling the Jerusalem artichoke, though not so good or wholesome, but possibly useful for feeding pigs. Nearly fifty years later, in 1754, Philip Miller wrote that potatoes 'are despised by the rich and deemed only proper for the meaner sort of persons.' By that time, however, the potato had become established as a regular crop in Lancashire; its cultivation rapidly spread to other districts, until in 1846 the destruction of the crop by disease in Ireland brought about political consequences of the gravest character.

XXII

A Clyde Seaman's Chantey

Seafaring men, those at least of the coastwise and fisherman class, are not commonly credited with much refinement. Having spent much of my holidays as a boy, and leisure as a young fellow in their society, fishing in the Bay of Luce and elsewhere, I take this occasion to record that I can remember nothing said or done by any one of them that the most anxious mother would object to being said or done in the presence of her boy. Nay, for that matter, there was no reason why I should not have taken one of my sisters with me on these excursions.

These men, as a class, were God-fearing and reverent according to their lights. They never discussed religious matters in my presence; on the other hand, they never referred to them with disrespect. There was a story told of two of them, Sannie Coid and another whose name I forget, who were overtaken by a furious squall when in an open boat in the Bay. The squalls were

violent; a nasty chopping sea got up, and it looked as though the boat might founder any moment.

'Sannie,' said the man whose name I can't remember, 'Sannie man, if ye wad pit up a bit prayer it might help us.'

'Me pray!' Sannie is reported to have said; 'man, I hae nae skeel at the prayin'.'

'Weel,' quoth his mate, 'I think ye should try your haun'; for I reckon we'll need a' we can get to win through.'

Sannie said nothing for a few minutes, his eye fixed on the luff of the close-reefed lug-sail; then he broke silence.

'O Lord! it's no aften I'm asking onything o' ye; if ye'll help us this ae time and bring us safe to port, it's no likely I'll be asking onything o' ye again.'

The simple petition was effective, inasmuch as the little craft weathered the storm in safety.

I wish I had treasured more of the songs and sayings of these hardy fellows than I can now call to mind. One ballad, especially, I blame myself for not having committed to memory as I had it long ago from the lips of an aged fisherman near the Mull of Galloway.

The subject thereof was the sea-fight between the squadron of the French Admiral Thurot, and the British Captain Elliot, about which I have put together some notes on page 201. The old fisherman has long been dead, and although I have sought diligently of late in the neighbourhood of his dwelling, I have failed to recover any trace of the ballad. But now, as I sit in a luxurious state cabin of a White Star liner, the long

swinging roll of the Atlantic fits itself to the rhythm of a chantey that keeps running in my head—nay, but I must avoid that awkward colloquialism, for it brings to mind the eighteenth-century quatrain:—

> 'A lady said to me, and in her own house,
> "I do not care for you three skips of a louse."
> I paid small attention to what she had said,
> For a woman talks most of what runs in her head.'

So I must start afresh to repeat a chantey which I picked up in youth from the lips of a Clyde yachtsman. It bears some marks of antiquity (I myself can answer for more than half a century of its existence), and it is so closely associated with the memory of a long, sunny calm and the roll of a ground swell, that it ought not to sink into oblivion in an age when even herring-boats are propelled by steam or oil.

THE GOLDEN VANITEE

There sailed a bonny ship, and a bonny ship was she,
  Heigh diddledee for the Lawlands law!
Her name it was the Golden Vanitee,
  And she sailed for the Lawlands law.

She sailed and she sailed a league but barely three,
  Heigh diddledee for the Lawlands law!
When she cam up wi' a French gallee,
  As she sailed for the Lawlands law.

Then oot spak the Captain, and oot spak he,
  Heigh diddledee for the Lawlands law!
'Oh wha'll sink me yon French gallee,
  As she sails for the Lawlands law?'

Then oot spak the Cabin-boy, and oot spak he,
  Heigh diddledee for the Lawlands law!
'Oh what'll ye gie me gin I sink yon French gallee,
  As she sails for the Lawlands law?'

Then oot spak the Captain, and oot spak he,
Heigh diddledee for the Lawlands law!
'Oh I'll gie ye gin ye sink the French gallee,
An estate in the North countree.'

Then oot spak the Cabin-boy, then oot spak he,
Heigh diddledee for the Lawlands law!
'Oh it's I'll sink ye yon French gallee,
As she sails for the Lawlands law.

'Ye maun row me up tight in a black bull's hide,
Heigh diddledee for the Lawlands law!
Ye maun thraw me ower deck-board, sink or soum,
As ye sail for the Lawlands law.'

They hae rowed him up tight in the black bull's hide,
Heigh diddledee for the Lawlands law!
They hae thrawn him o'er deck-board, sink or soum,
As they sailed for the Lawlands law.

Then aroun' an' aroun' an' aroun' soum he,
Heigh diddledee for the Lawlands law!
Until he cam up wi' the French gallee,
As she sailed for the Lawlands law.

Now some were playin' cards and some were playin' dice,
Heigh diddledee for the Lawlands law!
Sae he bored in her bottom thirty holes in a trice,
As she sailed for the Lawlands law.

Now some they ran wi' hats and some they ran wi' caps,
Heigh diddledee for the Lawlands law!
But they couldna keep out the saut water draps,
As they sailed for the Lawlands law.

Then aroun' soum the Cabin-boy, aroun' soum he,
Heigh diddledee for the Lawlands law!
Till he cam up again wi' the Golden Vanitee,
As she sailed for the Lawlands law.

'Now thraw me oot a rape and pu' me up aboard,
Heigh diddledee for the Lawlands law!
An' prove unto me as gude as your word,
As ye sail for the Lawlands law.'

'I'll thraw ye oot nae rape, nor pu' ye up aboard,
Heigh diddledee for the Lawlands law!
I'll ne'er prove to you as gude as my word,
As we sail for the Lawlands law.'

'Gin ye thraw me not a rape and pu' me up aboard,
Heigh diddledee for the Lawlands law!
I'll sink ye as I sank the French gallee,
As she sailed for the Lawlands law.'

They hae thrawn him oot a rape and pu'd him up aboard,
Heigh diddledee for the Lawlands law,
And they proved unto him far better nor their word,
As they sailed for the Lawlands law.

June

XXIII

NIGHT after night at this season a free entertainment is provided for wayfarers by moorland roads, though few there be to take advantage of it. The Glow-worm This, and this only, it has in common with the all-absorbing cinema, that the display can only be enjoyed in the dark. And whereas daylight lingers to such a late hour (according to summer time) in our northerly sky that most of us are abed before the glow-worms light up, consequently there are thousands of country-bred men and women who have never seen the little lanterns that twinkle so prettily by the roadsides in uncultivated lands. Wheresoever heather and bracken prevail against agricultural encroachment, there these little torch-bearers congregate, and illumine the rough herbage with their love-lamps. It is well worth devoting a warm night to an excursion to witness them.

In connection with this creature, a time-worn nursery riddle may be paraphrased thus—when is a worm not a worm? Answer—when it is a glow-worm. For *Lampyris noctiluca*, the title which Linnæus borrowed from Greek and Latin writers to bestow upon this insect, is far more highly organised than any worm, being in fact a true beetle. The confusion of terms

has arisen through the wingless female, superficially resembling a grub, displaying a far more brilliant light than the male, thereby attracting most attention from casual observers. While the male in his ultimate metamorphosis acquires the full panoply of a beetle, with effective wings and horny wing-cases, his spouse retains a larval form through life. Wingless and worm-like, she is doomed to creep humbly in the herbage, trusting that the glow of her lantern may bring her the connubial company to which she feels entitled. Nor does she trust in vain. Winged suitors are astir throughout these brief summer nights, and respond eagerly to the beacon which announces that the lady is at home.

The material and mechanism of the said beacon long baffled the scrutiny of biologists, nor has the chemistry of animal luminescence been elucidated further than to establish the process of its production as an interaction of two substances—lucifern and luciferase. The resulting light differs in no respect from ordinary light, except that it is all visible, containing no invisible ultra-violet or ultra-red rays. Those who care to know how knowledge of the structure and action of the luminous organs of animals have been acquired, and the degree in which physical and chemical research have elucidated the problem, may study with advantage Professor E. N. Harvey's treatise on *The Nature of Animal Life*.[1] Meanwhile, that indefatigable observer, the late J. Henri Fabre, did much to unravel the secret during the last years of his life.

[1] J. B. Lippincott Co., Philadelphia and London, 1920.

'My hand is not so steady,' he says, 'nor my sight so good as once they were; but, so far as they allow me, I consult anatomy for the structure of the luminous organs. I take a scrap of the epidermis [of a female glow-worm] and manage to separate pretty nearly half of the shining belts. I place my preparation under the microscope. On the skin a sort of whitewash lies spread, formed of very fine granular substance. This is certainly the light-producing matter. To examine this white layer more closely is beyond the power of my weary eyes. Just beside it is a curious air-tube, whereof the short and remarkably wide stem branches suddenly into a bushy tuft of very delicate ramifications. These creep over the luminous sheet, or even dip into it. . . . The luminescence, therefore, is controlled by the respiratory organs, and the result is that the white material is oxidised by the action of the tube and its branches distributing a flow of air over it. There remains the question of the substance whereof the white sheet is formed. The first suggestion was phosphorus, in the chemist's sense of the term. The glow-worm has been calcined and its ashes treated with violent re-agents that bring the simple substances to light; but no one, so far as I know, has obtained a satisfactory answer along these lines. Phosphorus seems to play no part here . . . the answer lies elsewhere.'

Fabre was not content with guessing that the light was the result of oxidisation. He proved that portions of the white sheet retained their luminosity after being removed from the insect, so long as they were exposed to the air. Plunged into boiled, and therefore de-oxygenated, water the light was instantly extinguished; but when placed in ærated water containing plenty of free oxygen, the light reappeared. Fabre found by repeated experiment that the female glow-worm can heighten the illumination by directing a puff of air on

the two bands of white material on her abdomen, and can extinguish the light altogether by closing the tube. These bands are absent in the male; but both sexes carry a small lantern on the last segment of the abdomen—the tail, as it would be termed in popular parlance—which diffuses a modest glow, not only in the adult insect, but also in the larva. Even the eggs are more or less luminous.

It is at this point that Professor Harvey steps in, and, after recapitulating the successive stages of research in this matter, carries it a stage further towards elucidation.

Fabre's contribution to the life-history of the glow-worm was not limited to analysis of its luminescence. He ascertained what was its food; and if he was not the first observer to settle that question, none preceded him in detecting the mode which this voracious little beetle adopts in taking its prey. It feeds exclusively on the flesh of snails, and has to watch vigilantly for a chance of getting access to the snail's mantle. Let but a fragment of the fringe of that mantle show from beneath the shell, and the glow-worm seizes the opportunity. A single nip with its hooked mandibles sufficeth to paralyse the snail, for the glow-worm injects a fluid which deprives the mollusc of all control of its muscles and, let us hope, of all feeling, for the captor immediately sets to work sucking the juices of its victim, and leaves it not until the skin is empty. Anæsthesia, the hinge whereon the most delicate operations in modern surgery revolves[1]—the crowning

[1] More correctly, *one* of the hinges, others being antiseptic treatment and X-rays.

discovery of medical science in the nineteenth century —has been for millions of years the common property and daily practice of many species of predaceous insects.

XXIV

Towards the end of June 1921 a neighbour of mine told me that he had been puzzled by the note of a bird in a thick plantation of Scots pine and birch. He had repeatedly been to the place and, though he always heard the call, he never could catch sight of the musician. From his description and imitation of the sound—a monotonous, but melodious, flute-like note—I told him that it was probably a golden oriole. Having just returned from the south of Spain, where orioles abound, I was not surprised that he had failed to get a view of the bird, which is very clandestine in its habits, and is far more frequently heard than seen. During ten days which I spent in Tharsis, a mining village of Andalusia, I heard orioles calling every day, and almost every hour of every day, from a grove of lofty eucalyptus not far from my bedroom window, but only once did I see one of the birds, though I spent a considerable time looking for them.

The Golden Oriole

At the time my friend spoke to me, I was unable to visit the wood where he heard the note, although it happens to be on my land; but he persevered, and succeeded at last by a simple stratagem. He laid a

small piece of white paper on the ground near the thicket whence the sound came, concealed himself, and before long the musician, undoubtedly a male golden oriole (*Oriolus galbula*), perched on a bough above the paper, eyed it curiously, but did not descend to it. It was in July that I went to the place with my friend; but the song—if song it may be called—had ceased, and we could not see the bird nor discover any trace of a mate or a nest. I should add that my friend, although not a professed ornithologist, is a practical sportsman, much interested in wild life and accustomed to watching birds.

I may be told that the evidence in this case is defective because the corpse of the bird cannot be produced. That might be so if the stranger had been some kind of warbler or wader, genera in which some of the species resemble each other so closely that they cannot be identified with certainty until they are handled. But the male golden oriole wears such conspicuous plumage, —head, back, and breast clad in clear golden yellow, contrasting boldly with the sable wing-coverts—that it is impossible for any observer of ordinary experience to mistake him for anything else.

The golden oriole, as well as several other Asiatic and African species, belongs to the order *Oriolidæ*; but the Baltimore oriole (*Icterus baltimore*) has been assigned to a different family—*Icteridæ*. The plumage of that species resembles that of the golden oriole in its brilliant contrast of sable and gold, and owes its specific, as well as its popular, name to the fact that those were the tinctures of the arms and liveries of the

first Lord Baltimore, who received a grant of Maryland in 1632.

I was puzzled to conceive why our bird should have been induced to show himself by the attraction of a scrap of paper, until I found the following in the late Henry Seebohm's *Eggs of British Birds*, page 232:—

'The nest is always suspended from the fork of a horizontal branch, sometimes of a pine tree, but generally of an oak. The outside is composed of broad sedges and strips of inner bark, which are wrapped round the two branches forming the fork from which the nest is pendant. I have generally found intertwined with these long narrow strips a few withered leaves, *and almost invariably a scrap or two of newspaper*.'

The occurrence of this beautiful species in Britain is usually announced in the form of an obituary notice, a high price being set on the wanderer's head by collectors and taxidermists. More's the shame! for, as the late Lord Lilford remarked, it 'only requires protection and encouragement to become tolerably common,' at least in the eastern and southern counties of England. There are but few notices of its appearance in Scotland. Yarrell says that it does not seem to have been identified there; but the Rev. A. Baird, minister of Cockburnspath, Haddingtonshire, in his paper on that parish in the *New Statistical Account*, 1834, mentions the golden oriole, the hoopoe, and the Bohemian chatterer[1] as 'occasional visitants.' There are, however, some more recent notices, mostly from the southern Scottish counties, though the golden

[1] The waxwing, *Ampelis garrulus*.

oriole has been recorded also as visiting the Shetland and Orkney Isles, and that half-way house Fair Isle.

XXV

Nesting of the Barn Owl

A pigeon cote is fixed on a south wall close to the back-door of my house, about nine feet above the ground. The pigeons have all disappeared save one—dissatisfied, I suppose, with the rigorous war rationing that stopped their supply of Indian corn. The cote is of the usual form, in two storeys, each with two openings. Last year—1917—the lower storey was appropriated by a pair of starlings, which reared their brood therein, and returned this year for a like purpose. The upper storey, however, has been occupied this year by lodgers of greater importance. A pair of barn owls (*Strix flammea*) have reared therein a family of four fine youngsters, and flatter us by their confidence in allowing my grandchildren to handle the fledglings and bring them into the house, at the risk, it must be owned, of occasional sharp nips by the owlets. The owls, the starlings, and the solitary pigeon form an interesting and, so far, harmonious little community.

The flower-garden round the house is much infested by field-mice and voles, which doubtless would prove a far more serious affliction but for the vigilance of this beneficent family of owls. Nor are these barn owls our only police; for the adjacent wood resounds nightly with the hooting of brown owls (*Syrnium aluco*), which must have their nest not far off.

Unluckily those useful slug and insect hunters, the

shrews (*Sorex vulgaris*), pay the death penalty for their resemblance to mice. It should be more generally understood than it is by gardeners and amateurs that the shrews have no affinity with mice and voles. They belong to a totally different Natural order, forming, with the hedgehog and the mole, the British representatives of the *Insectivorœ* or Insect Eaters. Owls, I believe, devour shrews greedily; but dogs and cats, though they kill them readily, are deterred from eating them by the malodorous secretion of certain glands. The corpses of shrews, therefore, which I find lying about the garden, must be set down to the misguided industry of the kitchen cat.

Since writing this note I have received a letter from a friend at the other end of the county whose owls seem to be of a more truculent disposition than ours.

'Above the stable loft, within a few yards of my office door, there is a pigeon cote. Twelve or fifteen years ago three tumbler pigeons arrived of their own volition and took possession of the cote, which was then vacant. They became very tame and would feed out of my hand. Shortly afterwards, two of them disappeared mysteriously; the third remained. I noticed that this bird was always at the entrance of the cote in the evening, and I wondered why it did not go inside. I was soon enlightened, however, for I saw the pigeon attacked one evening by some enemy from inside the cote. The bird got away, but it clung to the place for a few days, not venturing, however, so far as I saw, back to the cote, and eventually leaving us altogether. On investigating the cause of the trouble, I found that a pair of barn owls had taken possession of the cote. They nested there, and brought forth three young ones. Since that time, there has been a brood of owlets every year. This season

(1918) there were no fewer than six young ones—the largest number I have seen.'

So there is a seamy side, after all, to the character of my well-loved owls! The disappearance of our pigeons may have been owing to graver circumstances than their dissatisfaction with the rations. Who among us can lay hand on heart and declare that he has never strayed from the strict path of virtue? Woodcocks, in the three south-western counties of Scotland, enjoy a statutory close-time from 1st February to 30th September in each year, but it would be rash to back the chance of survival for the woodcock that rises out of the heather before the ordinary sportsmen in the month of August.

XXVI

Flower Structure

No details in the anatomy of flowers are more fascinating than the various devices for securing cross-fertilisation by insect visitors. Upon the effective working of these devices depends in great measure the persistence of any particular race, and it is impossible to calculate how many species have become degenerate or actually extinct, owing to defects in their reproductive machinery.

In some families, the immense one of Barberry for instance, the object is secured through the irritability of the stamens. Poke a stalk of grass gently into the flower of any barberry; directly it touches the base of a stamen, the anther is brought down quickly upon the intrusive object. If that object be an insect in search of nectar, and if the anther be ripe, the visitor receives

a discharge of pollen on its back, which will take effect on the first flower with a ripe stigma which it visits afterwards.

In many other plants the device is purely mechanical. Note in the flower-bud of that lovely shrub the kalmia the prominent cusps or bosses that enrich the reverse side of the corolla. They render the flower-bud itself a very beautiful object, like a covered chalice of pink alabaster; but their purpose is more serious than merely for ornament. Corresponding to each cusp on the outside of the corolla there is a little pit on the inside, into which one of the anthers is firmly locked. As the flower opens, the wiry stamens are bent backwards and outwards, so that each forms a confined spring. In this position they remain, the anthers tightly held in the pits until the pollen is ripe. Then, and not till then, the pits loosen their hold so that the lightest touch may release the anthers; the stamens spring erect, flinging a little pellet of pollen to the distance of a foot or eighteen inches. When bees are busy among the flowers, these pellets may be seen flying in all directions, and some are pretty sure to fall on the ripe stigmata of neighbouring blossoms. It is amusing to release the springs with a pin or grass stem; but in this country a dry day must be taken for the experiment, for kalmia is a native of North America, where the atmosphere is much less humid than in these islands.

In the Sage family a different mechanism has been evolved, which may most easily be examined in the blue salvia or American sage (*Salvia patens*), a charming herb commonly used as a summer bedder,

but perfectly hardy in mild districts near the sea. The blossom is so designed as to benefit from the visits of humming-birds or large hawk-moths; wherefore, although *Salvia* is entitled as a Labiate to four perfect stamens, two of these have been sacrificed by conversion into plain short rods, obstructing the passage to the nectary. Any creature attempting to get at the honey must press against the rods, which, acting as levers, cause the anthers on the perfect stamens to descend and discharge their pollen on the beak and head of the humming-bird. The anthers then begin to shrivel and wither away. In this species of *Salvia* the pistil descends with the stamens, but its stigma is not receptive until the anthers have become functionless, when it grows longer and becomes ripe for fertilisation. The levers continue operative, causing the stamens to descend every time the flower is visited, bringing the pistil with them, so that the stigma at the free end of the pistil is sure to come in contact with pollen brought by bird or insect from another and later blossom. Effective security against self-fertilisation is secured by the anthers ripening and discharging their pollen before the stigma in the same flower is ready for impregnation.

This species of sage is obviously planned to profit by the visits of winged creatures larger than any that can be expected in the British Isles; for although a honey-bee, thrusting its way to the nectary, must set the machinery in motion, the pollen generally misses the insect, falling behind its tail. Humble-bees, being too corpulent to enter the narrow throat of the flower, have

in some gardens, not in all, learnt the trick of biting through the neck from outside, and so gaining burglarious access to the sweets.

From the opposite side of the globe to the Mexican sage comes *Roscoëa purpurea*, a Himalayan herb, in no degree akin to the other, for it belongs to the Ginger family. Yet it has acquired an arrangement of levers very similar in design and purpose to those of the blue salvia. The flower is of a vivid purple hue, and possesses six stamens, but, as in the sage, only two of these carry anthers. Two others are flattened out so as to form a white hood protecting the anthers, while the third pair project across the throat of the flower, acting as levers when pressed back by a bee or other large insect to bring down the anthers, which discharge their pollen on its back.

XXVII

June Flowers

The most brilliant herb in the borders just now (9th June) is *Hippeastrum pratense*, better known by its old name of *Habranthus*. This Chilian bulb has not hitherto been appreciated by amateurs as it deserves; at all events, one may visit fifty or one hundred gardens in succession at this season and never be cheered by its flame. Yet it is perfectly hardy, except perhaps in the coldest parts of our island, and produces plenty of offsets for propagation. But the hue of its graceful blossoms is so flagrant—dazzling orange scarlet—that one has to be careful about the company assigned to it. Last year I removed a clump from below a sunny south wall, because its blossom

clashed excruciatingly with those of an Austrian copper briar trained against the wall, and found a fresh place for it in the middle of a wide border. Worse than ever! Here it is flaring this year (1921) between a bunch of *Geum Borisii* in front, with flowers the colour of red lead, and a great bush of *Buddleia globosa* behind, loaded with orange balls. All three are choice plants; but between them they set up an insufferable discord. So I must work out fresh quarters for the *Hippeastrum*, taking care not to let it clash with the red variety of the Pyrenæan lily (*L. Pyrenaicum rubrum*), whereof the jaunty Turk's-caps are painted with the same hue in a lower key.

Lily experts set small value upon this lily, both in its common yellow and rarer red forms. Mr. Grove, in his excellent handbook[1] on the genus, does deign to notice the red variety, and, after remarking that the yellow Turk's-cap is of 'the easiest culture,' dismisses it as being 'not a thing of beauty,' producing flowers with 'a peculiarly objectionable smell.' *De gustibus*, etc.—I suspect that if this good-natured lily demanded coaxing as importunately as *L. Leichlini* or *Parryi* it would hold a very high place in our esteem. Admitting that the red-flowering form thereof has neither the grace of *L. pomponium* nor the intense sealing-wax scarlet of *L. Chalcedonicum*, it and its yellow sister are the earliest of all lilies to flower; and if their odour offends fastidious nostrils (my own olfactories are of a fibre to suffer it gladly), plant the bulbs out beside woodland paths, where they will thrive in the grass as

[1] *Lilies*. London: T. C. and E. C. Jack. N.D.

cheerfully as any daffodil. I have reason to believe that the clumps of the yellow form that enliven our woodsides were planted about one hundred years ago.

Another vehement note is struck at this season by *Papaver umbrosum*, a brilliant annual poppy which sows itself in odd corners and sends up a shower of blood-red cups with black blotches on the bases of the petals. As it does not exceed 18 inches or 2 feet in height, it is not so dangerous to its neighbours as the Oriental poppy, which is simply irrepressible and ruthlessly smothers anything which it can overshadow.

Among the myriad species of *Primula* newly imported from the Far East, the majority are of but little use for outdoor gardening, being either of biennial or uncertainly perennial habit. But *P. helodoxa* is an acquisition of much merit, its tiers of canary yellow blossom forming a charming contrast with the sky-blue spires of the blue Himalayan poppy—*Meconopsis latifolia*—which springs self-sown in a nook half shaded from the sun.

Several species of *Roscoëa*, an attractive genus of the Ginger family, are now in cultivation in this country, but are not yet so often seen as they deserve to be. They take kindly to our climate in deep loamy soil, requiring special attention only in one respect, namely, marking with permanent labels to protect them from destruction in forking and hoeing. If that is neglected, they are pretty sure to come to grief, forasmuch as of all herbs with which I am acquainted they are the latest to show above ground. *R. purpurea*, which has been longest in this country, is a Himalayan species

and for several years after its introduction was grown in a hot-house; but in the milder parts of the country is perfectly hardy and increases steadily. It does not flower in the open before mid-July, and not a sign of its presence was visible till June was a week old. The rose-coloured *R. Humeana*, also from Himalaya, and the Chinese *R. cautlioides*, with sulphur-coloured bloom, poked up their noses only ten days ago, yet are now (9th June) in full flower; whereas *R. capitata*, which withholds its rich purple blossom, as dark as *Iris chrysographes*, till August, never shows above ground until after Lammas.

Messrs. Bees, to whom we owe the introduction of many good things from China, supplied me with yet another species under the trivial name of August Beauty. It is practically a late-flowering replica of *R. cautlioides*, and forms a good contrast with *R. capitata*, both growing to a height of 15 or 18 inches, with handsome lanceolate foliage.

To enumerate one-tenth of the plants in flower at this season would run this note to exorbitant length, even if no account were taken of shrubs; yet I cannot refrain from mentioning three which are not commonly seen. Great cushions of the grass-leaved Gromwell (*Lithospermum graminifolium*), hanging on the sunny face of a retaining wall, are now one mass of lovely azure. This is a sweet-tempered plant, making believe year after year to be as happy in our tepid west-country summers as under the sun of its native Italy. On the same wall are bulging domes of *Alyssum spinosum*, close-set with millions of minute white

flowers, glimmering in the gloaming (or as Devonshire folk would express it, 'in the dimsey') like a snowdrift. Lastly, let me draw attention to *Mimulus radicans*, a native of New Zealand, as an ideal carpeting plant for bulbs. Covering the ground closely with little spoon-shaped bronzy leaves which lie flat on the soil, it does not interfere with the welfare of other herbs as doth that dread strangler *Arenaria Balearica*, and at this season it is starred with monkey-flowers of clear yellow, rich violet and pure white.

July

XXVIII

The Elusive Hedgehog

In treating of hedgehogs in a former note I spoke of our failure to confine these animals in the flower-garden, which it is much desired that they should inhabit for the better repression of slugs and nestling mice.[1] Having that object in view, I have for some years past encouraged members of my family and others to bring every hedgehog that could be captured, to be turned into the said flower-garden, which is securely fenced on three sides, partly by brick walls and partly by wire-netting; while access and exit on the fourth side can only be had through our house. One would suppose that the hedgehog, being the reverse of nimble, once brought within the enclosure would either reside there or, if the conditions proved unsuitable, give up the ghost. Well, of all those that have been so interned, I don't believe there is one left. They have not died, else we should discover their remains, and it seemed impossible that they should have escaped, until some light was thrown on the problem by an incident in the summer of 1921.

A young plantation is surrounded by a fence of wire-netting as a protection against rabbits. A young lady

[1] *Memories of the Months*, Sixth Series, p. 128.

passing along the outside of this fence, found a full-grown hedgehog suspended from the topmost wire by a hind leg which had got jammed between the wire and the netting. The poor creature was alive, but the leg was badly broken in compound fracture. It was brought home and carefully tended, but did not long survive.

Now there are only two ways of explaining the mishap to this hedgehog. One can hardly believe that even the most thoughtless of schoolboys can have had the barbarity to place the animal in the position in which it was found. Yet if a human was not concerned therein, one is forced to the conclusion that the hedgehog was climbing the vertical wire-netting when its leg got caught in the wire, and was broken when the creature fell. That this is what really happened seems likely from the escape of the others from our garden.

XXIX

Swallows, Martins and Swifts

The domestic economy of a pair of swallows that chose the porch of my house as a nesting-place has been a source of considerable interest to our youngsters during the summer. The resolute patience of these birds was put to severe test by the diligence of an excellent housemaid, who, to avert the mess inseparable from rearing a brood of nestlings, pulled down the half-finished nest four times. Each time the little architects set to work again from the foundation; the fifth time I interposed to allow them to put through the job. Incubation followed in due course, and four young swallows were successfully

hatched. They increased in bulk until their quarters must have proved inconveniently tight. It would have been very interesting to see their first flight, but, despite considerable, if intermittent, vigilance this was denied us. No doubt J. Henri Fabre, whose patience was inexhaustible, would have risen before the summer sun and watched until its setting, and so have succeeded in witnessing what I have never seen described. One morning, however, we discovered the quartette of fledglings seated in a row on the dripstone of a window about ten yards distant from the nest, whither they could not have gone except by flight. Here the parent birds incessantly visited and fed them. At nightfall they were all back in the nest, and on the third day they were flying about strongly, hawking flies on their own account. But at the time this note is being penned, they return each evening and tuck themselves into their birthplace, which by this time is a sorely dilapidated lodging.

The true swallow of our islands (*Hirundo rustica*) is often popularly confused with the house-martin (*Chelidon urbica*), and most of the announcements which appear annually in the newspapers about the arrival of 'the first swallow' may be interpreted as indicating the house-martin. There should be no difficulty in distinguishing between the two species, the underparts and rump of the house-martin being pure white, and its wings and tail-feathers much shorter than the swallow's. The nest of the house-martin is a much more substantial affair than the frail half-saucer of the swallow, and is often built on inland crags and

sea-cliffs; whereas the swallow, so far as I have seen, invariably takes advantage of human architecture, however humble, to obtain overhead shelter. I cannot, however, endorse from personal observation, Yarrell's statement that the situation chosen for the nest is 'most frequently a few feet down an unused chimney,' although the Carolina wood-ducks, whereof we had a pretty fleet on the Sanctuary Lake at one time, used to surprise the householders in a village a mile distant from the water by choosing that somewhat hazardous place to build in.[1] Overhead shelter is essential to the stability of the nests of both swallows and martins, forasmuch as, being composed of earth glued into a stiff paste by the builder's saliva, the structure would soon dissolve if exposed to rain. A third species of the swallow tribe, the sand-martin (*Cotile riparia*), evades the vicissitudes of weather by burrowing deep into any sandy bank and putting together a few feathers and bits of grass as a cradle for its brood.

The swift (*Cypselus apus*) resembles the swallows so closely in its habits and general appearance, subsisting like them upon flies caught on the wing and rearing its young in a nest formed of earth moistened with saliva, that it is popularly regarded as belonging to that family; but its true affinity, as shown by important

[1] Our pretty wood-ducks are now but a pleasant memory. Originally about sixteen in number, they dwindled in the course of years down to one; partly, I suppose, owing to their seasonal migratory tendency, and partly because they used to go flighting at night at the risk of getting shot. Bitter was the regret of my son who, returning one night from flight-shooting, found a fine Carolina drake in his bag. It is, of course, impossible to distinguish the plumage of any bird in silhouette against a night sky.

structural features, is quite distinct, causing it to be grouped by Huxley with the *Trochilidæ* or humming-birds and the *Caprimulgidæ* or nightjars in the sub-order *Cypselomorphæ*. The specific name *apus*, Greek for 'footless,' bestowed by Linnæus upon the common swift, is less appropriate than most of the titles chosen by that great classifier. In truth, the swift not only has a pair of serviceable feet, but they differ in construction from those of almost every other kind of bird. The four toes on each foot are all directed forward, and differ in the number of joints in each toe from the arrangement universal, or all but universal, among birds, even including, as Professor Newton has pointed out, the fossil *Archæopteryx* from the Upper Jurassic limestone of Solenhofen in Bavaria.[1] The normal arrangement of phlanges or joints on the feet of birds being 2, 3, 4, 5, that in the swifts is 2, 3, 3, 3.

In heraldry the martlet, representing either a swallow, a martin, or a swift, is represented as footless, and is therefore assigned as the mark of cadency for a fourth son, who might be assumed to be without expectation of substantial inheritance; and so, to quote the words of an old writer, 'the martlet is an agreeable mark of difference for younger sons, to put them in mind to trust to the wings of virtue and merit, and not to their legs, having no land of their own to set their feet upon.'

A remarkable feature in the swift family consists in

[1] The Archæopteryx is the earliest form of bird yet discovered. It retains many features of its reptilian ancestry, having teeth in both jaws of its powerful bill and a tail formed of 20 vertebræ,

the activity of the salivary glands, which secret a viscid fluid used in the architecture of their nests. In the common swift it binds the particles of earth into a firm concrete; but swifts of the genus *Cobacalia* use little other material than their own saliva. Man, being indeed omnivorous, has discovered that the nests may be dissolved into a palatable stock for soup, highly esteemed by Chinese epicures; but Western gastronomy has not yet been educated to regard the saliva of any animal as a delicacy!

It seems grimly appropriate that swallows, martins, and swifts, which subsist by preying upon flies, should in turn be afflicted by a winged parasite peculiar to themselves. This is a dipterous fly of the family *Hippoboscidæ*, named *Stenopterix hirundinis*, whereof two or three generally lurk in the plumage of each bird. This fly, which is closely related to the sheep-tick (*Melophagus ovina*), the forest fly (*Hippobosca equina*), which torments thin-coated horses so intolerably, and the parasite of the red deer (*Lipoptena cervi*), has such a hard, horny skin that the swallow cannot rid its nest by devouring the creature. Knowledge of these parasites is still very imperfect; it is believed, however, that, luckily for the birds infested by them, they are not bloodsuckers, but content themselves by feeding on the scurf at the roots of the feathers. Still, one cannot but think that the presence of these loathsome, clinging vermin, each of which bears about the same proportion in bulk to its host as a full-grown rat does to a man, cannot be otherwise than grievously irritating.

XXX

North and South

The dominance of animals and plants indigenous to the northern temperate zone over those native to the corresponding region in the southern hemisphere, is a commonplace of zoology and botany. Safe and speedy transit through the tropics is all that is required to enable many forms of northern life, both animal and vegetable, to establish themselves permanently in southern lands; but no instance has been recorded of any animal, vertebrate or invertebrate, or of any plant migrating from the southern hemisphere and forming a successful colony in the northern temperate zone.

'The weeds of Europe,' says Professor Miall, 'do not suffer when transported to the southern hemisphere, but flourish and often drive out the native plants. The weeds of the southern hemisphere are unable, however, to make things even by invading any patch of ground in Europe. . . . There is no reciprocity in the matter. Southern plants, and more rarely southern animals, do now and then get access to Europe, but they cannot maintain themselves there. All kinds of foreign plants are brought over in ballast or wool, and for a season or two they come up where they may chance to be thrown out; but when the supply ceases, native plants quickly take their place. . . . I know of not a single animal native to a distant southern country which can maintain itself in Europe.'[1]

Reference has been made earlier in these notes to the calamity brought upon Australasian farmers by the introduction of the rabbit.[2] Stoats and weasels brought

[1] Miall's *Round the Year*, pp. 202, 203.

[2] See page 39 *supra*.

in to mitigate the evil have wrought dire havoc on some of the native fauna. The European brown rat has brought the Maori rat of New Zealand to the verge of extinction; and the starling has multiplied to such a prodigious extent in Australia as to defy all attempts to keep it in check. Red-deer and brook trout acquire dimensions on the hills and in the waters of New Zealand compared with which their British progenitors seem but pigmies.

In regard to plants, I thought that I had discovered an exception to the rule so lucidly expressed by Professor Miall. It must be well on to fifty years since I noted how the common monkey-flower (*Mimulus luteus*), so generally cultivated for the gaiety and profusion of its yellow flowers, had escaped from some garden and established itself along the margin of a small burn in Linlithgowshire. Since that time it has established itself—a welcome colonist—in many parts of the country. In Galloway many miles of water-course are made gay with the summer embroidery of this pretty herb, which undoubtedly has come to stay. Now, in some gardening books, this *Mimulus* is stated to be a native of Chile, on the faith of which statement I hailed it as a colonist from the southern hemisphere, and prepared a note thereon for a scientific journal. Luckily for such shreds of credit as remain to me, before dispatching the note I carried inquiry a little further, and found that *Mimulus luteus* is a native, not of Chile, but of California. It appears to have found its way first to the Pacific coast of South America, established itself there, whence it was carried to the

British Isles. So far, therefore, from furnishing an exception to the rule, the distribution of the monkey-flower tends to confirm it.

There are, however, certain plants from southern latitudes which, in the middle districts of this country, compete successfully with our native weeds. Planted out in our woods, the South African *Montbretia Pottsi*, and its hybrids, with *Tritonia* and *Crocosma*, readily establish themselves, and increase so rapidly by the multiplication of corms that they soon cover a considerable space of ground, suppressing weaker vegetation. Other examples are two shrubby species of Veronica from New Zealand, *V. Traversi* and *parviflora*, which spring from seed in all parts of our garden borders, and if let alone, form dense thickets. They are only prevented from populating the woods by the presence of rabbits, which greedily devour them. Another pair of exceptions to the general rule occurs in the immense family of Berberis, whereof two species, *B. buxifolia* and *B. Darwinii*, both from South America, colonise any suitable places in British woods and gardens as freely as our native wild roses. Yet another pair comes from South America—to wit, *Fuchsia globosa* and *Tropæolum speciosum*, both desirable aliens that have established themselves as escapes from western and northern gardens.

Australasia is peculiarly rich in shrubs and herbs of the Composite order, notably *Senecio* and *Olearia*, and considering the enormous quantities of seed discharged in floating clouds from shrubs of these genera cultivated in British gardens, I have often felt surprise

that these seeds all went to waste. In the course of many years I have only found one self-sown seedling of any of these species in our borders, viz. *Olearia numnuclari folia*. Mr. Irwin Lynch, who so ably filled the office of Curator of the Cambridge Botanic Garden, reminds me that plants of the Composite order are almost invariably self-sterile—that is, to produce fertile seed they require cross-fertilisation between individuals. *Olearia* and the shrubby species of *Senecio* being usually propagated in this country by cuttings, it follows that the plants produced by that method are merely parts of a single individual, and being self-sterile, the seeds they bear are self-sterile also. But it is impossible to believe, in view of the immense number of living plants, some of them very bulky, like tree-ferns, imported into Britain from Australasia, plenty of fertile seeds of Composites have not found their way hither, just as the seeds of British groundsel, dandelions and thistles have been carried with agricultural seeds to the southern hemisphere. The difference is that our weeds establish themselves freely in their new environment, whereas Australasian weeds of the same natural order make no headway in the northern hemisphere.

The restrictive agency preventing the dispersal of southern plants in the northern temperate zone may be recognised, possibly, in extensive plantations of blue gum (*Eucalyptus globulus*) and jarrah (*E. rostrata*) in southern Spain, where the climate is not unlike the average of Australia. From the former species we obtain pitwood for our mines in ten years, and sleepers for our railways in twenty years. Formerly we used

seed in our nursery ripened on our own trees; but our forester has discontinued doing so, having found that seed imported from Australia produces much stronger plants.

XXXI

Some Shrubby Meadow-sweets

In these our days, when the influx of new plants from China and elsewhere far outstrips the capacity of any establishment humbler than a botanic garden and its staff, it has become more necessary than ever to exercise discretion in admitting none but the most desirable in any genus. In no genus is there more need for thoughtful selection than among the shrubby Spiræas, most of which demand ample room to develop their full beauty. Among the June-flowering species Mr. Bean gives the palm to the hybrid *Spiræa van Houttei*, which he esteems as 'probably the finest of all the white-flowering Spiræas, except perhaps *S. arguta*,' which is also a hybrid, and flowers in April. It is with diffidence that I find myself at variance with the judgment of so high an authority, to whom we owe that indispensable work, *Trees and Shrubs Hardy in the British Isles*; but whatever be the relative merits of the two kinds at Kew, here *S. bracteata* is incomparably finer than *S. van Houttei*. We had to decide lately on sacrificing one or other of two fine specimens, one of each variety, which were elbowing each other, and we had little hesitation in removing the Dutchman.

Both species are profuse in wreathing their bending sprays with snowy hemispherical rosettes in June; and

the loftier *S. canescens* follows suit in July with blossoms similarly arranged. But it was reserved for Mr. E. H. Wilson to bring from China the noblest of all the clan in the form of *Spiræa* (or, as some will have it, *Sorbaria*) *arborea*, which attains the stature of a small tree, sending up rods to a height of twenty feet. These arch out gracefully, bending under the weight of huge plumes of blossom which they bear in August and September. If you have command of a spacious, sheltered glade, with reasonably moist soil, set therein a plant of this species, secure for it plenty of head and side room for development, and I will guarantee you against disappointment.

And now, having sounded the praise of certain members of this family, let me think of any epithets short of blasphemous to describe the evil propensities of certain others which are a source of sore affliction to the unwary. If, seduced by the pretty rose-coloured panicles of *Spiræa Douglasi* and a few allied species, you are misled into planting them in the back rows of a herbaceous border, you are asking for interminable trouble, for they spread like any knotwood, sending subterranean runners to immense distances, and shooting up vigorous suckers in the heart of your choicest *delphinium*, lily clump, or whatever else you cherish most dearly. These they will eventually throttle, and, unless prompt and severe measures are taken, your border will become in two or three seasons a dense thicket whereof nothing short of drastic revolution can rid you. Nevertheless, *S. Douglasi* forms an excellent undergrowth in woodland, good cover for

game, and attractive both in summer, when set with dense, upright spikes of flower and in autumn, when the leaves turn yellow.

The name *Spiræa* used to puzzle me, for it seemed to indicate a spiral habit of growth, whereas none of the family known to me shows any tendency to climb. The late Lord Avebury, while he still bore his more familiar name of Sir John Lubbock, explained the reason of the title by showing me that the carpels are twisted into a spiral. Howbeit, the suggestion put forward in his work on *British Flowering Plants* that the intention might be 'to mimic small caterpillars, and thus inveigle birds to carry them [the seeds] about,' leaves me quite cold. British birds are far too good field-naturalists to be cheated by such a shallow device.

XXXII

The Common Toad

In turning over the pages of the *Gentleman's Magazine* for December 1783 my attention was drawn to a discussion on the alleged venomous properties of the common toad (*Bufo vulgaris*), a creature which I hold in high esteem by reason of its beneficent function as garden police, preying voraciously on snails, woodlice, earwigs, and other noxious creeping things. It must be owned that a toad's appearance is the reverse of prepossessing, which no doubt accounts for the fact that, ever since men and toads first became personally acquainted with each other, many and grievous offences have been imputed to the amphibian. The belief is still pretty

widely spread that the toad spits poison; it is regarded in some places as a harbinger of ill luck; and it was accused of old, not only of sucking the udders of cows, but of destroying their power of yielding milk for ever after. It is to be hoped that in the present stage of our knowledge of natural history every intelligent person has dismissed these charges as absolutely groundless.

Nevertheless *Bufo* has one very effective means of defence, whereof one of the correspondents of the *Gentleman's Magazine* gives apt illustration:—

'I was much inclined,' he says, 'to think that a vulgar prejudice had loaded the toad with undeserved obloquy; but some doubts were raised in my mind by the following incident. A young spaniel took up in his mouth a large toad which had crept into my study during the night. As he was carrying it away, he suddenly threw it down, ran about the room seemingly in great pain, foamed very much at the mouth, and showed every symptom of violent anguish. These continued for more than an hour, till some warm milk was brought to him, after drinking which he appeared quite recovered in a very short time, and no further effects ensued.'

That young spaniel had learnt his lesson, and it would have been impossible to induce either him or any other dog, after similar experience, to tackle a toad. For although the toad is wholly incapable of spitting or otherwise discharging poison aggressively, it carries a quantity of strong milky venom, stored in the glandular warts with which its skin is thickly set, and this flows out freely if the creature is bruised or wounded. The toad itself has no control over the flow of poison, which

acts automatically as a defence against assault and battery. Shakespeare was country-bred, and ought to have known better than to accept and repeat the current slander against this useful and harmless amphibian; but he names it in more than twenty passages in his plays, always with loathing and contempt.

Thus:—

> 'Sweet are the uses of adversity,
> Which, like the toad, ugly and venomous,
> Wears yet a precious jewel in its head.'
>
> *As You Like It*, Act II. Sc. 1.

> 'Never hung poison on a fouler toad.'
>
> *Richard III.*, Act I. Sc. 2.

And so forth. So truly hath it been spoken, 'Give a dog a bad name and hang him!'

I have referred to the excellent service rendered to gardeners by toads in the destruction of snails, beetles, woodlice, earwigs, and other pests. It seems, however, that our British *Bufo* draws the line at slugs. Dr. Hans Gadow of Cambridge has described how he kept toads in his conservatory for many years, closely observing their habits, but never induced one to swallow a slug. One should say that it predicates a palate of extraordinary sensitiveness to discriminate between snails, which the toad loves, and slugs, which it abominates.

A toad's movements are peculiarly sluggish and awkward in all respects except one, namely, the action of its tongue in seizing its prey. This has been so aptly described by Dr. Gadow that I must crave leave to

quote him, which is more honest than to offer his observations in paraphrase:—

'The biggest [toad] of all, and several others, became so tame that they took food whilst sitting on the hand, and then they looked up for more. The food must be alive and show movement. Mealworms, snails, beetles, and other small creatures are first carefully inspected with bent-down head, and are sometimes followed for a few inches. Then comes an audible snap, a flash of the rosy tongue, and the prey has disappeared. Large earthworms are nipped up by the jaws and laboriously poked in with the hands. . . . Several are taken at one sitting, until the toad is gorged. One of the biggest took full-grown mice, which were not "fascinated by the fiery eyes," but were stalked into a corner and then pounced upon immediately when they moved. The shells of snails can for half a day be felt through the body. . . . I know of no instance of slugs being eaten.'[1]

It is perhaps not generally known that a toad changes its skin at intervals of a few weeks, the operation being accomplished almost as quickly and easily as the unrobing of a judge. But the judge who should follow in every respect the toad's example in this process would be landed at last in a difficulty, because the toad, grasping the old skin with its fingers, draws it up to its head, crams it into its mouth, and swallows it!

[1] *The Cambridge Natural History*, vol. viii. pp. 172, 173.

August

XXXIII

The Painted Lady

BUTTERFLIES have been as much in evidence this season —1917—as they were invisible during the dismally wet summer of 1916. They were there all the time, no doubt, but lying low in the herbage, waiting for the sun to bring them on the wing. Not until September was the cloud canopy withdrawn, and then we had a fair show of Red Admirals. It has been quite different this year. To-day—12th August—there was as great a multitude of the Small White (*Pieris rapæ*) as I have ever seen on the wing. We lay not much account by these, but among them floated a distinguished individual in the person of the Painted Lady (*Vanessa cardui*), a species which only appears at uncertain intervals in our corner of the land, and then too often with battered and faded wings, blown hither from other shires, or even shores; for we probably depend for those wafted from the Continent for maintenance of the stock in these islands. It is not easy otherwise to account for its apparently total absence from Great Britain in certain seasons, while in others it becomes quite a common butterfly.

Anyhow the Painted Lady—*la Belle Dame*, as they

call her over the water—is an inveterate wanderer, migrating to all temperate parts of the globe, and laying her eggs wherever thistles are to be found in Europe, Asia, Africa, America, and even Australasia. It has been recorded by an observer in India that in 1879 a swarm of these butterflies took half a day to pass a given point. A few years ago I saw about twenty of them in Chelsea Physic Garden, practically in the heart of London. Luckily, we need never fear having too many Painted Ladies, seeing that the caterpillar feeds only upon thistles, declining to be seduced to any more succulent diet. All the genus *Vanessa*, which comprises the handsomest British butterflies, should be inscribed on our list of friends, for the larvæ of the Red Admiral, the Peacock, the Small Tortoiseshell, and the Comma all feed on nettles, and those of the extremely rare Camberwell Beauty and the Large Tortoiseshell respectively on the willow and the elm.

A specimen of the Painted Lady fresh from the chrysalis, such as gladdened my eyes to-day, is a far brighter object than the weather-beaten traveller one usually meets with. The ruddy orange of the groundwork of the upper surface of the wings had not faded to tawny-buff; the snow-white spots which set off the sable on the fore-wings were lustrous in purity; while the under-surface of the wings which the insect displayed when at rest, was even more fascinating, being delicately marbled with cream-colour, pink, buff, yellow and white.

PS. in 1921.—Never have I seen so many Painted Ladies as I have during the present halcyon autumn.

No wind-wafted immigrants these, but glossy, swift-winged beauties fresh from the chrysalis, feasting with Red Admirals and Lesser Tortoiseshells on the asters and large stonecrop as late as mid-October.

XXXIV

Birds in a Dismal Summer

The caprice of British meteorology was never displayed with more striking effect than in the summer of 1912. In the previous year the land lay gasping under such a drought as the present generation had never experienced in these islands; water supplies were exhausted in all parts, and green pasture seemed a fair dream of the past. And what is England without her verdure?

> 'Green fields of England! wheresoe'er
> Across the watery waste we fare,
> Your image in our hearts we bear,
> Green fields of England, everywhere.'

A torrid summer was followed by a winter mild almost beyond any in memory, with copious floods, interrupted by two or three nights of intense frost at the beginning of February 1912, enough to wreak ruin upon many choice growths that had been lured into precocious activity by the warmth and wet of Christmastide. The 'sweet o' the year' gave us fair promise, May being a lovely month of warmth and sunshine; but before its close, the clouds stooped low, and we saw the face of Phœbus no more. The very dog-days, which should be the hottest of the year, owing to the earth being unable in the short nights to shed one day's heat before the

sun pours in the next day's charge—the dog-days, I say, served but to usher in the Lammas floods, which came in most unkindly guise, cloud-bursts in one parish, snowfall in the belated hayfields of the next, the Highland hilltops white and seven degrees of August frost in many parts of the low country. Men said that the like had never happened before.

Nay, but they were wrong. The seasons have not altered one whit in historic times—say rather, that they have altered incessantly since history began to be written. Shakespeare, the all-knowing, has drawn from nature a picture in *Midsummer Night's Dream* so faithfully reflecting such a summer as that of 1912 that I cannot refrain from repeating the passage:—

> 'Therefore the winds piping to us in vain,
> As in revenge, have sucked up from the sea
> Contagious fogs; which, falling in the land,
> Have every pelting river made so proud
> That they have overborne their continents.
> The ox hath therefore stretch'd his yoke in vain,
> The ploughman lost his sweat; and the green corn
> Hath rotted, ere his youth attained a beard.
> The fold stands empty in the drowned field,
> And crows are fatted with the murrain flock;
> The nine men's morris is fill'd up with mud,
> And the quaint mazes in the wanton green,
> For lack of tread, are indistinguishable.
> . . . . . .
> Therefore the Moon, the Governess of Floods,
> Pale in her anger, washes all the air,
> That rheumatic diseases do abound,
> And thorough this distemperature, we see
> The seasons alter; hoary-headed frosts
> Fall in the fresh lap of the crimson rose;
> And on old Hyems' chin and icy crown
> An odorous chaplet of sweet summer buds

> Is, as in mockery, set. The spring, the summer,
> The chilling autumn, angry winter, change
> Their wonted liveries; and the 'mazed world
> By their increase now knows not which is which.'

No detail is here wanting of our experience of the treacherous winter and dismal summer of 1912; whence the conclusion may be drawn that if the British climate played such pranks in Elizabethan days, it is not likely to mend its ways in ours. Young grouse were well afoot before the evil days began; but partridges were just chipping the shell when the drought and heat of May vanished before the cruel cold and wet of June. The nests were unusually well filled and there was promise of a splendid stock; but in most districts the chicks were wiped out wholesale. Bereaved parents were far more frequent than coveys; here and there a pair of old birds might be seen leading a single young one, sole survivor of what should have been a jocund little company of a dozen or sixteen.

In other departments of bird-life—the arboreal and aquatic groups—the effects of the season were not so disastrous, and the result of the Wild Birds Preservation Acts is apparent in the steady increase of two very dissimilar species—to wit, the great crested grebe and the goldfinch.

Of the grebe, the late Lord Lilford was able to note with satisfaction, before his death in 1896, the gradual return of this handsome water-fowl to the haunts whence it had been well-nigh exterminated by the diligence of the purveyors of grebe-skin muffs, boas,

hats, etc. It was in 1894 that I first saw a single individual on the Sanctuary Loch at Monreith. In the following year it returned with a mate and reared a brood; since which grebes have bred there every year.[1]

This bird now rears its young in many places where its recent appearance created some excitement. I happened not long ago to be staying at Osterley Park, so near to malodorous Brentford, when word was brought to Lord Jersey that there were two cormorants on the pond close to the high-road to Isleworth. I went down at once to verify what would indeed have been a remarkable visitation, and found that the strangers were a pair of great crested grebes. The quarters suited them; they stayed to breed, and now may be seen, not only there, but on many other suburban sheets of water—at Syon House, Richmond Park, and even in populous Islington. If there were but a few reed beds in the Serpentine, it is certain that these fine birds would take up their abode there.

Still more delightful is the reappearance of the goldfinch—loveliest and most innocuous of all the genus. From some districts it had entirely vanished for many years, owing to its being the easiest of all song-birds to net with a decoy, and because it is in constant request as a cage-bird. Not only may large flocks now be seen in the autumn and spring migration (on a day in March 1912 a neighbour of mine, a well-known field naturalist, counted eighty-three gold-

[1] In the spring of 1915 might be seen a singular group in a reed bed on this loch, consisting of a swan and a great-eared grebe sitting on their nests within three or four yards of each other.

finches with siskins on his lawn), but many pairs remain to breed in places where I had not seen a single goldfinch for twenty years.

Market gardeners complain bitterly about the loss of fruit they sustain from the increase of small birds owing to protective legislation; nor is their grievance groundless, especially in regard to bullfinches. But there is no more blameless fowl than the goldfinch, which has no use whatever for fruit or fruit buds, and subsists entirely on the small seeds of thistle, groundsel, and other weeds of cultivation. But, like other hard-billed birds, it has to provide animal food for its young. In 1922 two broods of goldfinch were reared in our flower-garden (a cat killed the prospective mother of a third, after she had two eggs). It was pretty to see the parent birds dipping their beaks into the foam of 'cuckoo-spit' and pulling out the yellow grubs of *Philœnus spumarius*.

XXXV

Blood-sucking Insects.

On the whole, we whose lot is cast in the British Isles may reckon ourselves fairly fortunate in the matter of blood-sucking insects. Those who suffer from indoor parasites have only themselves to blame, seeing that the presence of such creatures is inconsistent with domestic or personal cleanliness. Out of doors, however, we are at the mercy of a variety of winged assailants. There exist, for instance, in Great Britain several species of gnat (*Culex*) and midge (*Ceratopogon*). 'Mosquito' is but the diminutive of the Spanish *mosca*, a fly and is properly applied only to insects of the genus *Culex*,

whereof the larvæ are aquatic, propagated in any stagnant water. Gnats or mosquitoes are not usually very aggressive in this country, although one species, *Culex pipiens*, accounted in India among the most troublesome of the genus, often develops in hot weather very bloodthirsty activity in London and the southern English counties. But it is otherwise with midges, which, as we are painfully aware, are wont to make life a burden by their intolerable system of pin-pricks. The most detestable species of midge has been labelled with a scientific title so grotesquely out of proportion to its microscopic dimensions as to cause profane persons to affirm that entomologists can have no sense of humour. It is known as *Ceratopogon varius*; while in England the prevalent species are *C. pulicaris* and *C. bipunctatus*. It is no satisfaction to be assured that it is only the female midge that bites. No doubt the only cause that restrains her spouse from doing the like is that which prevents a cherub from sitting down —*il n'a pas de quoi*!

I have confessed already in these notes how I was once put to flight by swarms of midges from a pool in a river whence I had already extracted one nice salmon, and was morally certain that I should get another if I had had the pluck to face the torment again;[1] but even more formidable than midges are the swarms of sand-flies which lurk in the herbage beside certain rivers in Scotland and Scandinavia. The torment which I suffered from these little devils when fishing the Beauly in August 1920, inspired me with a desire to know something of their life-history, whereof

[1] *Memories of the Months*, Sixth Series, p. 166.

I was profoundly ignorant, so when I was back in my own library I turned up the late Professor Miall's *Natural History of Aquatic Insects*[1] and Lieut.-Colonel Andrew Balfour's *War against Tropical Disease*,[2] and found all that is known about the genus *Simulium*. Unlike midges, whereof the different species are bred in decayed wood, cattle dung, and other substances, the larva of sand-flies is aquatic; its legs are so modified that each pair forms a sucker, and it attaches itself by the hind-pair to a leaf or stone under water. It cannot, therefore, move at the surface and breathe atmospheric air like the larva of the gnat, but must rely on a supply of free oxygen in the water. For this reason, *Simulium* can be bred only in swift or rough streams, whereof the water is thoroughly and constantly aerated. For a description of the strange vicissitudes attending the metamorphosis of this tiny insect, and especially the peculiar mechanism that enables a minute, fragile creature with gauzy wings to emerge from the pupa in the depth of a torrent and escape to the upper air without injury, I must refer my reader to Professor Miall's admirable treatise above mentioned. But there is one statement by that high authority which I cannot reconcile with my experience of British sand-flies. After mentioning that various species of *Simulium* have proved a serious plague both to human beings and cattle in Hungary and on the Lower Danube, and also to explorers in Australia, the learned professor remarks that 'in Britain the flies of *Simulium* are perfectly harmless.' Now, assuming

[1] Macmillan and Co., 1895.

[2] Wellcome Bureau of Scientific Research, 1920.

that I am correct in identifying as a species of *Simulium* the bloodthirsty swarms which rose from the heather at every step on the banks of Beauly, no epithet could be found less appropriate to their conduct than 'harmless.' They were simply insatiable, and in such clouds as half to blind one. Probably an explanation is forthcoming in the fact that Miall's observation was conducted in weedy Yorkshire streams, wherein he found the larvæ attached in countless numbers to the leaves of submerged water-plants. When he adds, 'I believe that the larvæ found in stony streams belong to a different species,' it appears that the habits of the sand-flies which I encountered on the Beauly, which, for the greater part of its course, is a rushing torrent among cliffs and boulders, have not as yet been submitted to scientific scrutiny.

The question often presents itself—Upon what do blood-sucking gnats, midges and their kin feed when there is no human being at hand to prey on? To this no decisive answer has ever been given. Mr. David Sharp inclines to the view that it is an acquired habit, confined, as aforesaid, to the female insects. Probably food of any kind is not essential to the welfare of these insects in the imago stage of existence, any more than it is to a butterfly; but just as a butterfly sucks honey on sunny days and fasts on rainy ones, so Madame and Mademoiselle Midge suck the juices of animals and succulent vegetable with equal avidity when they get the chance. But why can't they do so with decent regard for the comfort of their victims? Why should they inject some kind of irritant fluid when they begin their meal? The nature of that fluid has

not been ascertained; indeed its presence can only be assumed from the fact that the microscopic instrument with which the puncture is made is quite incapable of raising a blister and causing lasting irritation, unless it is accompanied by some poison. The immediate purpose of the irritation seems to be the promotion of a flow of serum to the wound, whereby the blood is prevented from coagulating. It has been surmised that a similar effect is produced upon the juice of vegetables when bitten by mosquitoes or midges.

The common house-fly cannot bite, although it is undoubtedly a carrier of disease by polluting human food with its excrement; but there is an insect easily mistaken for it, which inflicts a painful stab, followed in most cases by acute inflammation. This is *Stomoxys calcitrans*, not uncommon in our gardens during the summer, a near relation of the dreaded tsetse-fly. *Stomoxys* bears a pretty close resemblance to a house-fly, but it is somewhat smaller, and may be distinguished from *Musca domestica* by the abdomen, or posterior half of the body, being of a light grey marked by seven black spots on its upper surface. I have had one eye completely bunged up by the swelling from a bite on the brow, which I attributed to *Stomoxys*, though I did not catch it *in flagrante delicto*. People so attacked sometimes attribute the mischief to a common house-fly that has been feeding on carrion.

Bed bugs, body lice and certain species of flea have been ascertained to be carriers of disease among human beings, but it is still doubtful whether any flying and biting insect indigenous to this country injects noxious bacilli in the act of sucking. Happily our islands do

not harbour, though they may receive occasional visits from, the species of gnat known as *Anopheles* which disseminates Mediterranean fever, nor the deadly *Stegomyia calopus*, the carrier of yellow fever. The manner in which the last-named gnat has been brought under control, and almost extirpated in Panama and the West Indies, forms the subject at once of a fascinating romance and one of the most brilliant chapters in the history of applied science.

There is no obscurity in the purpose with which the insects briefly referred to above attack human beings. They are out for blood. But my house of recent years has been frequented in late summer by an insect whereof the operations are involved in considerable mystery. This is *Ophion luteus*, a fly half an inch long, of a yellow hue, with the abdomen united with the thorax by an extremely slender attachment, resembling that feature in some of the solitary wasps. It belongs to the family *Ichneumonidæ*, whereof about 6000 species have been recognised, more than 1200 being indigenous to Great Britain. Every member of this family is parasitic, the female of each species depositing her eggs in or on the body of some involuntary host, which is usually the larva of one of the *Lepidoptera* or other flying insect.[1] Each species of ichneumon-fly is parasitic on a special species, or at least genus, of insect. The female deposits her eggs by means of an ovipositor—an instrument in some species

[1] *Apanteles glomeratus*, the ichneumon-fly which is the parasite of the common white butterfly, deposits its eggs in the eggs of the butterfly and they are hatched in the body of the caterpillar, reside and feed there, ultimately causing its death.

as long or longer than her own body—with an armature effective for the penetration of the skin of the victim.

Thus far, there is no mystery in the habits of these remarkable flies, though much remains to be elucidated concerning the action and habits of many of the 6000 known species. They are not blood-suckers: the mystery consists in the behaviour of *Ophion luteus* in my own house. Several members of my family having complained of being either stung or bitten by these unwelcome visitors, always at night, usually after they had gone to bed, I consulted all available authorities on the nature of *Ophion*. Little was to be found about the species in such books as were at hand, so I submitted the problem to Dr. C. J. Gahan of the British Museum, who replied as follows:—

'It is one of the few *Ichneumonidæ* which are known to sting. It is doubtful whether it possesses anything in the nature of a poison gland. The sharp process at the end of the body is part of the ovipositor, and the pain experienced when this sharp instrument is driven into one's flesh may be merely due to the mechanical irritation, or possibly there may be some small amount of poison secreted. The presence of a small, narrow poison sac has been recorded in one or two *Ichneumonidæ*, but so far as I know, not in *Ophion luteus*.'

Now the sting is followed in every case by considerable swelling, accompanied by pain, which would not be the effect of the stab of a needle. It seems almost certain that some irritant must be injected into the wound, possibly for the purpose of paralysing *Ophion's* legimate insect victim, as in the case of the hunting

wasps. But what puzzles one is the purpose of this fly attacking a human being who has offered it no provocation. The wound is inflicted with the ovipositor; but it can hardly be that *Ophion* intends that her progeny shall be lodged and fed in the body of man, woman or child. She is normally parasitic on the caterpillars of various species of *Lepidoptera*, chiefly Noctuid moths, and has been said to lay her eggs on, and not in, the skin. I regret to confess that I missed a fair opportunity of observing the action of *Ophion luteus*. I was reading in bed when one alighted on the sheet and I instinctively killed it—a most foolish act of which I felt immediately ashamed.

I cannot close this note upon offensive insects without feeling how presumptuous it is for one with a mere smattering of entomology even to peer into that all but boundless province—to add one line to the vast literature of insect lore. How vast that literature is, may be estimated, nay, only vaguely inferred, from the fact that Professor Frederic Theobald, being charged with the task of preparing a monograph of a single family of insects, the *Culicidæ* (mosquitoes, gnats, etc.), discharged that task for the Colonial Office and the Royal Society by the production of five thick volumes! Howbeit, even the humblest observers of nature are encouraged to pick up crumbs of knowledge from the rich scientist's table.

PS.—Since the note above was penned Dr. James Waterston, at Dr. Gahan's request, has dissected a fresh female specimen of *Ophion luteus* and found 'a

poison gland, duct and reservoir similar in character to those recorded as being present in certain other species of *Ichneumonidæ*.' In a letter to *Nature* of 24th November 1921, Dr. Gahan quotes from a paper by M. R. du Buysson (*Revue d'Entomologie*, vol. ii. p. 257, 1892), in which he states that he has often been stung by *Ichneumonidæ* of different kinds, including *Ophion*, and that the pain and inflammation from the sting lasted only a short time. Individuals vary much in their susceptibility to sting-poisons. In every case brought to my notice in my own house the person who had been stung was young, and the sting caused considerable inflammation and hard swelling which took at least twenty-four hours to subside. 'In M. du Buysson's case,' wrote Dr. Gahan, 'the insect had always been held in the hand or otherwise irritated before it attempted to sting, and this seems to be the general experience. He was never puzzled to divine the purpose of the sting, regarding it, no doubt, simply as an act of self-defence; and that is the explanation which I would venture to suggest in reply to Sir Herbert Maxwell.' That explanation, however, does not solve my difficulty. The persons whose experience with *Ophion* I have recorded, were in bed and asleep when they were stung, except the young lady who was stung on the arm when reading in bed, and saw the creature in the act. The sleepers may have irritated the flies by involuntary or semi-conscious movements; but the young lady in question was wide awake and assures me that she was not aware that the creature was on her arm till she felt the stab, saw it

with its body curved to deliver the sting, after which it flew away.

XXXVI

The Ramanas Rose

Strolling one August morning along a solitary part of our sea-shore, with not a human dwelling in sight, my eye was attracted from a distance by some showy white blossoms. Puzzled at first to identify the plant that bore them, I found on reaching the place that they were borne by a stray plant of the Ramanas rose (*Rosa rugosa*), which had spread far and wide along a sandbank just above high-water mark. Never before had I seen this rose to such advantage, for it is too coarse and rampant for the flower-garden, although it is a desirable undergrowth in woodland. Here, on the beach, exposed to full sunshine, its over-luxuriance curbed by Atlantic gales, it has taken on a character vastly superior to that which it displays under cultivation. The hint was worth taking, and I have planted some roots of the crimson flowered form of this rose to contrast with the white one. Coming in this manner upon a garden plant escaped to the wild gives one the same sort of thrill that one feels on overhearing a chance strain of melody from some tuneful maiden in the scullery or a baritone booming in the bathroom.

The sandbank whereon this rose has flourished is almost the last kind of soil one would have pronounced suitable for it. It is thickly carpeted with *Convolvulus soldanella*, whereof the lovely rose-tinted chalices have

lured many an amateur to the unprofitable task of transporting it to the garden. Even if it flourishes there, which it seldom does unless the garden happens to be on the beach, it suffers in grace by divorce from its natural environment of dry, wiry bent.

The Ramanas rose was first brought to this country from Japan or China (it is native to both countries) nearly eighty years ago. Our acquaintance with *Rosa Moyesii*, from Western China, dates only from 1908, but has been long enough to prove its superlative merit and adaptability to our soil and climate. No wild rose, indeed no cultivated rose known to me, can rival the peculiar hue of its blossom—a rich, velvety crimson deepening to brown madder in shade, but transmitting pure scarlet when the sun shines through the petals. It is a rampant grower, sending up rods six feet long in a single season; but unlike the Ramanas rose, it does not spread by suckers. The hips are remarkably showy; seeds germinate freely, and no rose is better adapted for naturalising in woods and hedges. I owe to Mr. J. C. Williams possession of a very beautiful variety of this rose, with flowers of a delightful pale carmine colour.

Rosa Hugonis is another recent introduction from Western China, free in growth, but not so rampant as *R. Moyesii*, bearing wreaths of sulphur-yellow blossom, followed by black fruits. He (or she) who possesses these two species may rest assured that, among the many new roses brought from the Far East of late years, they are the pick of the basket.

XXXVII

All persons directly interested in agriculture, as well as those indirectly concerned for the welfare of that industry as a source of food supply, may read with advantage Dr. W. E. Collinge's paper in the *Journal of the Ministry of Agriculture* for December 1920. Dr. Collinge has applied intensive study during many years to analysing the diet of our commoner birds. He estimates that 10,000 rooks will consume in the course of a year 232 tons of food. Scrupulous examination of the contents of the crops of hundreds of these birds at different seasons has led him to conclude that the said weight of food would probably be made up in the following proportions:—

The Food of the Rook

Grain, ...	80 tons
Potatoes and roots, ...	32 „
Beneficial insects, ...	7½ „
Injurious insects, slugs, snails, etc., .	65 „
Miscellaneous, ...	47½ „
Total, .	232 tons

Assuming this estimate to be aproximately correct, the balance appears considerably to the detriment of the rook's character from the farmer's point of view; but the question remains—Supposing the 10,000 rooks had not consumed 65 tons of injurious insects, would these insects have destroyed as much agricultural crop as the rooks did? Dr. Collinge thinks they would not, as a considerable percentage of the insects would have been eaten by starlings, lapwings, and other birds.

He sums up, therefore, against the rook; without, it appears, taking into due account the prodigious reproductive power of insects, which, had they suffered less check from insectivorous birds, might have multiplied to a truly calamitous extent. On the evidence it seems a fair conclusion that the injury done by rooks to agricultural crops is nearly, if not quite, balanced by their destruction of injurious insects.

The character of game birds lies under a darker cloud, not merely of suspicion, but of assurance on the part of practically every farmer. In this connection attention may be drawn to a note in the *Field* newspaper, for 25th December 1920, illustrated by a photograph of the contents of a cock pheasant's crop. The bird was shot in a market-garden near Ackfield in Sussex, and its crop was found to contain no fewer than 1083 leather jackets (which in Scotland we call 'pouts'), the destructive larva of the daddy-long-legs or crane-fly. This grub spends three years underground before passing into the pupal stage, and its ravages upon young corn, grass and root crops are but too well understood by farmers and gardeners.

September

XXXVIII

Lochiel's Beeches

It occurred to me one day to speculate on the origin of the term 'to heel in,' used technically in the sense of placing young plants closely in a trench as a temporary expedient to keep their roots fresh till they can be properly planted out. Not having the *New English Dictionary* at hand, I turned to Skeat's *Etymological Dictionary*, only to find that the word is not given in that sense. 'Heel,' part of the foot, and 'to heel over,' as a sailing ship in a breeze—both are fully explained; but to discover the origin of 'heeling in' plants I had to consult Bosworth's *Anglo-Saxon Dictionary*. There it is made clear that it has no connection with the other two words of identical spelling, but is the modern form of the Anglo-Saxon verb 'helan,' to hide or cover; as in Genesis xxxviii. 15—*Heo helode hire nebb*—'she had covered her face.' The word survives in English only in the limited use of heeling in plants—that is, covering their roots.

Singular results may ensue if something happens to interfere with the removal of plants treated in this manner. The most notable instance known to me is at Achnacarry, the chief seat of Cameron of Lochiel. In the year 1745 Donald Cameron, remembered to this day as 'the Gentle Lochiel,' was actively engaged, like

many other Scottish landowners at that time, in improving his estates by reclaiming waste land and planting trees; being encouraged to that enterprise by a degree of security for life and property such as had not been known in Scotland since the death of Alexander III. in 1286. Under the firm and temperate rule of that monarch the realm attained a measure of peace and prosperity without precedent in its annals. Men looked wistfully back upon it in the coming centuries of wasteful war with England, as expressed by Andrew of Wyntoun, father of Scottish history, in his *Oryginal Cronykil*:—

> 'Quhen Alysander oure Kyng was dede,
> That Scotland led in love and le,
> Away wes sons of ale and brede,
> Of wyne and wax, of gamyn and gle.
> Our gold wes changyd into lede;
> Chryst, born into Virgyneté,
> Succouré Scotland, and remede,
> That stad is in perplexité.'

Union of the Scottish and English Legislatures in 1707 had prompt and beneficial effect upon Scottish commerce and industry, and Lochiel was among those who took earliest advantage of the change. But in July 1745 work upon his land was rudely interrupted when Prince Charles Edward landed at Borrodale and summoned the Highland chiefs to his standard, which he caused to be unfurled at Glenfinnan on 19th August. Lochiel, who was then fifty years of age, well foresaw the desperate nature of the enterprise, and sent his brother Archibald to endeavour to dissuade the Prince from attempting it. When his remonstrance failed of

effect, Lochiel felt himself bound in honour to call out his clan, and to stake everything on what he believed to be the rightful cause. He brought 800 clansmen to the muster at Glenfinnan; all work on his land was, of course, suspended, including that of tree-planting, which had been started on a considerable scale. During the Chief's absence a quantity of young beech arrived to his order from the south, and long rows of them were 'heeled in' on the bank beside the river Arkaig, awaiting his instructions. But Lochiel 'came back to Lochaber no more.' He was carried off the field of Culloden severely wounded; but recovered under the care of his cousin Cluny Macpherson, who nursed him back to health in a shieling on the steep side of Ben Alder. His estates were forfeited and his person attainted; but he made good his escape with his brother Archibald and the Prince in a French ship, afterwards receiving the command of the Regiment of Albany in the service of Louis XV. He died in exile in 1748.

The beeches were never lifted from the trench wherein they had been heeled to await the Chief's return. They have grown as they were set—such of them at least as were not suppressed by crowding. There they stand at this day in serried ranks of silvery stems, so close that a man may hardly pass between them. No more pathetic memorial of a lost cause—no more fitting cenotaph for the Gentle Lochiel—could be designed than that weird grove with its perpetual gloaming. Winter winds wail a coronach among the bare branches; in summer the leafy boughs cast a dark shade over the swift-running Arkaig. Empires and

dynasties rise and fall; generations of men are written off with the ages; but Lochiel's beeches endure, living recorders of Job's repining phrase—

'*Homo quasi flos egreditur et conteritur.*'

XXXIX

Gut Substitutes

When the compiler of a catalogue of second-hand books classifies some volumes under the heading of Angling and others under the heading of Sport, it looks as if he did not regard angling as a sport. We anglers, however, know better than to take offence, as we might justly do, if, as certain profane persons have suggested, angling literature were relegated to the category of Fiction. We know that angling not only takes high rank among field-sports (notwithstanding the ungenerous slight passed on it by the immortal Porthos—'*La pêche est un plaisir roturier; je le laisse à Mousqueton*'—his valet)—but that, once let a man come under the spell of the waterside, and even old age will not release him from it. The late Canon Greenwell was over ninety years of age when he told me that he had killed some trout in that summer, which he feared would be the last he should land; but he lived to ninety-seven, and killed some (in a pond, it is true, with a float and worm) in the last year of his life. Tom Todd Stoddart put the right sentiment into verse as a young fellow, and fulfilled as a septuagenarian the purpose expressed in them:—

'And I, when to breathe is a burden, and joy
Forsakes me, and life is no longer the boy,
On the labouring staff and the trem'rous knee
Shall wander, bright river, to thee.'

But my present purpose is neither to extol the delights of fishing in the abstract, nor to prose of my own prowess in the concrete, but to discuss the merits of a material which, in various forms and under different names, has been used as a substitute for silkworm gut. I believe it *is* silkworm gut in another form, *i.e.* that it is prepared from the entrails of the silkworm when it is about to spin. It differs from Spanish gut in being far stronger, lustreless, supplied in knotless lengths of 40 yards or more, and amazingly cheap. Some years ago I was the guest of a friend, now no more, on the lower reaches of the Spey in the month of February. We went a-fishing, he having attached to his line a cast of single gut called 'the Hercules,' for which he told me he had paid 13s. 6d. We went to our respective beats, and when we met at luncheon by the riverside, he had disaster to chronicle. In playing a lively fish in strong water his reel line had parted, and away went the beautiful Hercules cast. 'Well,' was my comment, 'if I had lost my cast it would have been the loss of sevenpence, plus the value of the fly!'

Eleven years ago I made acquaintance with gut substitute under the name of Taleraña. Though exceedingly strong when fresh, the strands composing it had a disagreeable tendency to separate after being in the water for some hours. That defect has been entirely put right in the later forms of this material, and during all these years I have seldom used any other in salmon-fishing. But it is well to remember that all forms of this material are treacherous in one respect. Take a strand thereof (which, as aforesaid,

may be knotless for 40 yards or more) and you may lift a dead weight of 20 lb. with it wet or dry. But tie a knot in it, and you may snap it with a very slight pull. This, it must be admitted, is a very dangerous feature, for one is very liable to get a knot in the cast when fishing in a high wind. Moreover, special care is necessary in attaching an eyed fly to the cast. The ordinary figure-of-eight knot is perfectly safe, if the return end of the cast is brought *over* the eye and made to lie there. If it is left under the eye, pressing against the cast, trouble is likely to ensue. To illustrate the extraordinary strength of this material, an incident on the upper water of the Beauly early in September 1920 may be cited. My host took me down to where the river issues from Loch Bunacharan in Strathfarrar. Here I had a splashing rise, with no result. Next he bade me fish a long and likely-looking stream, but nothing moved. The sun was very bright and hot; so my friend said we would go down and try the Strone pool (I think he called it). A long rough scramble through a wooded glen bestrewn with huge boulders brought us to a remarkable bit of the river, which paused in a dark, swirling basin before plunging down in tossing rapids through a ravine where no human foot could follow. It was obvious that if a fish were to be killed here, he must not be allowed to leave the pool.

We were on the right bank with a strong backwater running on the hither side. The lie of the fish is along the foot of the cliff on the left bank and in a small space of glassy water just above the rapid. Owing to

the intervening backwater it was not easy to get the fly into 'hang' on the far side. When this was accomplished, it swung nicely over the smooth glide at the foot of the stream. I managed this, as I thought, pretty successfully, several times, but nothing happened. I handed the rod to my companion, bidding him take a cast, as he knew the place better than I. He consented reluctantly, for he was hospitably keen for me to get a fish. He prefaced his essay by changing my fly for one of his own—a local favourite. He then put out a fine line to the very foot of the opposing cliff, and, if I remember aright, it was after his first cast that, just as the fly swung round into the smooth water, a huge boil broke the glassy surface. 'Ha!' I cried, 'you were too quick with him'; for my friend, as even an experienced fisher will sometimes do, had struck on the visible rise, a fatal act in salmon-fishing.[1] He admitted his error with honest chagrin: 'Give him another chance,' said I; though well I knew that a fish disappointed in that way will seldom make a second offer. This fish, however, seemed an exception to the rule. It is impossible to affirm that it was the same salmon which, as the fly came over the same place, made the same kind of boil; but probably it was so. Anyhow, this time the angler made no mistake; the fish was firmly hooked, and swam up into the depth of the pool, round which he took two or three turns,

[1] I have watched, from an elevated position, the movement of a salmon rising at another angler's fly. It usually poises for a second, perhaps breaking the surface of the water if the fly is not swimming deep, and then either dashes forward to take it, or sinks again as if it did not care for the look of the lure.

and then—bir-r-r-r! away he went, and in a jiffy was into the rapid below. There was no possibility of following him down; further and further he went, leaping twice among the tumbling waves. I gave up all hope of seeing that fish again, for it seemed out of the question that any tackle could stand the combined weight of the salmon and the stream. However, the fisherman kept his nerve, keeping a perfectly steady strain on rod and line, and letting the latter pay out as slowly as possible. I could hardly believe my eyes when the fish, which must have been nearly one hundred yards down the torrent, turned and ploughed its way slowly back into the pool; where a few minutes later, I had the satisfaction of putting the gaff into a pretty twenty-pounder. So much for the gut substitute. I am convinced that no cast made up of knotted lengths of single gut, however good and sound, could have withstood the violent strain brought to bear on it in that wild water.

Candour constrains me to add that, not only did I land no fish on that day, but had my eye wiped thrice. I have described how my host accomplished that in the Strone pool. His brother killed a small fish in the place where I had raised one in the morning, and another of 13 lb. in the long stream which I had fished without a rise.

XL

A notable addition to the dietary of British waterfowl was made about the middle of last century through the introduction of Canadian pondweed, then known to many botanists as *Anacharis alsinastrum*, but in recent classification as *Elodea Canadensis*. It is a unisexual plant and, so far as known to me, only the female form has reached this country; wherefore no seeds are produced on this side of the Atlantic. Even if they were so, it is not likely that the reproduction and dissemination of the species would be perceptibly accelerated, for every fragment of the tangled stems that is broken off and floated away is the sure founder of a new colony.

The American Pondweed.

This weed, which is not destitute of beauty both of form and colour, behaves in a manner peculiar to itself in British waters. So soon as a piece of it finds its way into a lake or river with rich alluvial bottom, it spreads with amazing rapidity and soon chokes up a wide water area. A few years ago, I forget how many, a sudden uprush of *Elodea* took place in Lochleven, and despairing anglers wrote to the newspapers complaining that the fishing in that famous loch had been ruined for ever, unless means could be devised for eradicating the pest. Having had experience of its behaviour in our Sanctuary Loch, which is far smaller than Lochleven, as it covers only between sixty and seventy acres, I wrote a reassuring letter to the *Scotsman* newspaper, bidding anglers believe that their occupation was not gone, only suspended for a few seasons. I ventured to predict that the weed would

not remain permanently rampant, but that after exhausting the soil, it would retire to the bottom and there lie low in the form of a close green carpet until the soil had recovered fertility. Such proved to be the case in Lochleven, which, I understand, is now as fishable as ever.

But there will come a recurrence of the plague. *Elodea* first appeared in our lake in 1895 or 1896 (it was first observed in Great Britain in 1847). It speedily took possession, and almost the whole of the water soon presented the appearance of a morass. My notes record that it did not wholly disappear from the surface till the winter of 1906-7. A fresh up-rush took place in 1913, and another in 1918, but on neither occasion did the obstruction last so long as after the first invasion. The sediment in this lake, which is a basin in a tract of good land, appears to recover fertility more rapidly than that of waters covering less generous soil. In hungry Highland lochs the weed may be trusted not to spread beyond such sheltered bays as may have formed a harbour for deposit of alluvium.

As there are no trout in our lake, only pike, perch, and eels, I can regard with equanimity the interference by these periodical visitations with the contemplative man's recreation, and am more than indemnified by the multitude of wild-fowl, both divers and surface-feeders, attracted by the weed. In ordinary seasons there are plenty of mallard, teal, tufted ducks, pochards, and golden-eyes; but when the weed is up, these are quite eclipsed in number by great flocks of

widgeon. Shovellers are more frequent also, as is natural when the food lies spread over the surface, and in 1919 I noted for the first time a pair of pintails. The weed seems to suit the taste of other creatures than birds, for I have often seen cattle browsing upon it in the shallows of a Hampshire chalk stream. Even upon anglers a visitation of *Elodea* is not an unmitigated evil, for it takes such complete possession of the water as permanently to choke out, or at least into insignificance, such troublesome weeds as *Myriophyllum.*

XLI

The Nightjar

September gales have tarnished the woodland with russet and amber, though sheltered glades still preserve their virginal verdure. Autumn has laid a gentle touch upon the flower-borders, where Nature has lulled many of her fairest children into their winter sleep. She has dismissed swifts, cuckoos, and nightingales to sunnier lands; but still—15th September—the nightjar lingers—proof that there is no shortage of night-flying insects as yet. I flushed one of these beautiful birds yesterday in a heathery glade among the pines. Would that its habits and blameless character were more generally understood than was the case fifty years ago, when it figured so frequently in the gamekeeper's list of vermin under a variety of aliases. To quote a single instance, it is recorded in the annals of a certain moorland shooting in the south-west of Scotland that the keepers destroyed thirty-three fern-owls in the seasons 1850 to 1854, in

the belief, no doubt, that they sucked the eggs of game birds. Suck eggs! One could have supposed that the most superficial inspection of the nightjar's beak might convince anybody that it would be as reasonable to accuse the Archbishop of Canterbury of robbing a hen-roost. In the whole list of British birds there is, in fact, not one that is more guiltless of interfering with human welfare than the nightjar, which is indefatigable only in pursuit of cockchafers and other crepuscular winged insects.

Why, then, are these birds persecuted? First because—

'Born a goddess, Dulness never dies.'

People in general don't care to know the truth about living creatures that they can't eat. Secondly, because of the difficulty of stamping out any lie that has got a good start. Lies about the nightjar have been given a start of thousands of years. The Greeks called the bird *αἰγοθήλης*—goat-milker; the Romans followed suit with *caprimulgus*, meaning the same thing; and we have endorsed the slander by adopting the latter name to designate the genus. Pliny elaborates the libel, declaring that these birds enter the goat-pens, suck milk from the she-goats, causing the udders which are attacked to wither and the she-goat to become blind![1] Italians have followed suit by naming the nightjar *pucciacapre*, the French *tette-chèvre*, and the Germans *ziegenmelker*. In short, all the most intelligent races in the world have conspired to give this innocent bird a bad name, owing to their credulous

[1] *Nat. Hist.*, pars. i. lib. x. cap. 40.

acceptance of the tales of primitive shepherds, who, seeing it flitting noiselessly to and fro in the dusk among their flocks, jumped to the conclusion that it was after milk. Nor have the alternative English names of night-hawk and fern-owl helped to clear the nightjar's character in the eyes of gamekeepers, who reckon all hawks and owls as members of the criminal class.[1] Needless to say, it is neither owl nor hawk, though recent systematists, tracing in it some affinity with owls, have assigned it a place among the *Coraciiformes*, along with owls, swifts and woodpeckers. One has but to examine the beak, with its wide gape beset with bristles, to recognise the bird as exclusively a fly-catcher, and to reject the names of goatsucker, night-hawk and fern-owl in favour of the one of nightjar, justly descriptive of the strange burring cry which it utters interminably on still nights in the summer woods. It makes this soothing sound only when crouching on the ground or resting lengthways on a branch. Unlike its distant cousin the swift, the nightjar pursues its prey in silence.

Admirably as the bill of the nightjar is designed for the capture of large moths and other nocturnal insects, it is of no use as a weaving instrument. Like the stone-curlew (*Œdicnemus crepitans*)—which, however, has a beak which looks as if it might be serviceable in nest-building—the nightjar makes not the feeblest attempt at preparing a receptacle for its eggs; but lays

[1] The late Professor Newton noted other popular names in use in different parts of England—churn-owl, eve-jar, puckeridge and wheel-bird, the last being in allusion to the bird's voice resembling the sound of a spinning-wheel.

them on the bare ground, choosing if possible the same spot year after year, without making any depression whatever on the surface. The female shares with many other birds the instinct which causes them to feign being crippled in order to lead an intruder away from their young. I was thoroughly deceived by the device on one occasion, following the artful actress for fully a hundred yards as she flopped and scrambled along. Sometimes she allowed me to come close to her as she sat with drooping wings and gaping beak, hissing like a snake; indeed, I doubted whether she had not really a broken wing, till she solved the question by rising and skimming away over the bracken.

XLII

Autumn Flowering Shrubs

The lady of a lordly demesne in the north having asked me to take counsel with her gardener about improving the grounds and garden, I spent the best part of a day perambulating what we call in Scotland 'the policies,' that is, what would be known in Ireland as 'the demesne.' The castle stands close to the sea; the garden and most of the grounds lie well sheltered from the worst winds; and although the situation is on the east coast, the district enjoys a climate so mild that, were it on the west coast, the open winters would be vaguely (and, as I think, erroneously) attributed to the agency of the Gulf Stream. The soil, too, being favourable for the growth of rhododendrons, I told the gardener that it seemed an ideal place for a collection of the Asiatic species, whereof so many new and fine kinds were

coming in great variety to this country. He met me by the objection—'The wu-r-r-rst of rhododendrons is they will not flower when the family is at home.' He spoke with evident resentment against the sad tactlessness of the genus; for which I fear there is no remedy, so long as county magnates continue to spend spring and summer in London.[1] Nor is there much prospect of that custom falling into disuse, although an attempt to put an end to it was made by the Scottish Parliament so long ago as the year 1426, when it was enacted that land-owners should 'big [build], reparrell and reforme their castles and manours, *and dwell in them* . . . for the gratious governall of their landes be [by] gude policie, and to expende the frute of their landes in the countrie quhair [where] the landes lies.'

My suggestion of rhododendrons having thus been turned down, we had to consider what shrubs delay flowering until summer is well-nigh sped. Although it is true that one cannot secure in autumn such a constellation of blossom as illuminates our shrubberies in spring and early summer, there is plenty of material for very delightful display, requiring reasonable forethought to secure. The following list has been compiled from the contents of a Scottish garden on the west coast, where the flowering season may be reckoned as a fortnight or three weeks later than in the southern counties of England. Plants suitable only for mild districts are marked with an asterisk * and those requiring the shelter or support of a wall are marked w.

[1] Some species of Rhododendron brought from China of recent years flower in July and August, such as *R. discolor*, *crassum*, *Scottianum*, etc.

Shrubs with white flowers.

Æsculus parviflora.
Aralia Chinensis.
Arbutus unedo.
Clematis flammula.
* Clerodendron trichotomum.
Cornus paucinervis.
Deutzia corymbiflora.
* Eucryphia cordifolia.
Eucryphia pinnatifolia.
Fatsia Japonica.
Hydrangea arborescens grandiflora.
* Hydrangea hortensis (also pink or blue).
Hydrangea paniculata grandiflora.
Hydrangea vestita.
w Jasminum officinale.
Ligustrum lucidum.
Ligustrum Sinense.
* w Myrtus Communis.
* Myrtus luma.
Olearia Haasti.
w Rosa bracteata.
Spiræa (Sorbaria) arborea.
Spiræa Lindleyana.

With yellow flowers.

Coriaria terminalis.
Hypericum Hookerianum.
Hypericum Henryi.
Hypericum patulum.
Hypericum triflorum.
w Lonicera Etrusca.
w Lonicera tragophylla.
Spartium junceum.

With red or pink flowers.

* w Abutilon megapotamicum.
* w Berberidopsis corallina.
* w Clerodendron fœtidum.
* Desfontainea spinosa.
Erica stricta.
Erica vagans.
* Fuchsia globosa.
* Fuchsia Riccartoni.
Hydrangea Thunbergi.
Indigofera Gerardiana.
* Phygelius Capensis.
Spiræa Japonica.

With blue or purple flowers.

Ceanothus Gloire de Versailles.
w Clematis Jackmanni.
Lespedeza cyrtobotrya.
Buddleia variabilis.

October

XLIII

The Herbaceous Border

'Come and look at my herbaceous border,' said a lady to me one fine autumn day, and I went readily, for I had never been to her house before, a charming residence standing within an ample well-wooded demesne. I have long since realised how just was Andrew Lang's description of gardening as 'a device of Providence for the pottering peace of virtuous eld,' and it is to the flower-garden that I gravitate most naturally on visiting a place for the first time.

Well, my hostess's herbaceous border lacked nothing in dimension. It was about 140 yards long, of ample breadth, straight as a line could lay it, and crammed with plants that showed unmistakable signs of skilled cultivation. But it was totally devoid of charm. Throughout its whole length there was nothing to break or vary its shadeless uniformity. Every half-dozen yards of it was a replica of every other half-dozen —a clump of asters, torch-lilies and helianthus in the back row, with herbs of descending stature arranged with mathematical precision towards the front. Having inspected the first few yards, one felt no inducement to go any further. True, it was chill October; asters glimmered uncertainly among tarnished torch-lilies; and helianthus flashed a few stars at regular intervals; no doubt there had been plenty of colour there in July,

but one wants something more than colour in a border, else we have gained nothing and lost assured brilliancy by discarding mid-Victorian bedding-out. Why did we discard it? Because there was none of the mystery, the variety, or the surprise which constitute the attractions of a well-arranged collection of hardy plants. One wearied of the formality, the monotonous repetition, the absence of anything unexpected. In no ornamental craft does the maxim *Ars est celare artem* apply so urgently as to the herbaceous branch of gardening. Design there must be, but it must not be thrust upon one as it is in a bed of scarlet geraniums all exactly the same size; but directed to making the plants look as if they had chosen their own position and agreed with their neighbours.

Moreover, care should be taken to impart an impression of permanence, which is one of the chief merits of hardy perennials. To maintain the rigid discipline established in the herbaceous border referred to above, the plants must be taken up and re-planted so soon as they betray the least tendency to liberty. Let me not be supposed to underrate the attention needed to keep a herbaceous border in good order. To do so requires far more varied knowledge and more constant care than the bedding-out system; but there can be no approach to perfection if the plants are constantly shifted. Some of them must be taken up at short intervals and divided if the best is to be got out of them, and if less vigorous species are to have a chance of developing their character. Asters, alstromeria, montbretia, herbaceous phloxes and helianthus

are among the things that require special vigilance in this respect; whereas lilies and many deep-rooting herbs intensely resent disturbance. The average life-term of different kinds of forest trees has been pretty accurately ascertained; but who shall estimate the duration of a clump of Christmas roses or hepatica? It is the permanence of such lowly growths, linking one generation of men with another, that imparts a peculiar charm to a herbaceous border of the right sort—a charm that vanishes, or is never allowed to settle, under the treatment prevailing in some large gardens. It was the lack of that charm that was fatal to the bedding-out system, which excited the eye, as a showy wall-paper might do, but left the imagination cold. Neither interest nor association could attach to plants that had to be flung on the waste-heap after the first frost; and the sweet-o'-the-year lost much of its delight when every garden was drilled into servile uniformity with a hundred others. Wherefore, when Mr. William Robinson raised the standard of revolt in the early 'seventies, an eager band of reformers rallied to it; and now practically every one who takes an understanding share in the ordering of a flower-garden has enlisted in the cause.

But whereas it is not every owner of a garden who has leisure and knowledge to apply to its care, the arrangement of hardy perennials must be left in many cases to a professional gardener, who, from the very nature of his calling, may instinctively incline to routine. This may account for the fact that herbaceous gardening is threatened, and in some cases has been overtaken, by that very blight of monotony which was the doom of bedding-out. The old system, despite its

monotony, was never dismal; but dismal effect is inevitable if the present tendency gains ground towards treating hardy perennials with the formality appropriate to tender subjects used only for summer decoration.

Nay, but dismal is not the right epithet for the scene which I surveyed one fine autumn afternoon in a remarkable garden on the grand scale in the north of Scotland. If colour be the chief aim in the cultivation of flowers, here it was affluent in the highest degree, and the ground lent itself to enhance the effect, falling in a gentle slope on either side of a rivulet winding for a couple of hundred yards down the centre of a walled enclosure. Broad margins of turf, scrupulously shaven, lay between the stream and magnificent herbaceous borders planted with great blocks of aster, antirrhinum, penstemon, helianthus, phlox, galtonia, wolfsbane, etc. One block was composed of thirty or forty plants of the choice *Thalictrum dipterocarpum*. It was a masterpiece of cultivation, and the pictorial effect was certainly splendid; and as I gazed down upon the brilliant glade I thought how scrappy and spotty my own jumble of shrubs and plants must seem to any visitor.

Yet there was something in the scene short of satisfying. Comparison may be odious, but it is inevitable; nor could I help comparing the impression received in this spacious demesne with remembrance of prowls within the far narrower bounds of, say, the garden of Bitton Vicarage in the late Canon Ellacombe's time, where every shrub had its story, every herb its individual interest. I may be told, probably with truth, that botanical pedantry is the source of this sentiment, and, *not* with truth, that had the dear old Canon pos-

sessed a great garden and means to maintain it 'top hole,' so to speak, he would have aimed at scenic effect by a similar method. I am well assured that he would not, for this very practical reason, that it was his purpose and custom to derive enjoyment from his borders at all seasons, whereas the autumnal display at ——— Castle could only be secured by concentrating effort upon that time of year, and forgoing beauty and interest during all the other months. Howbeit, when all is said, memory records that north-country garden as a very brilliant bit of landscape.

Many an old garden has been ruined by well-meant attempt to improve it, just as many an old English parish church has been scarified by 'restoration.' I have in mind one such garden which was full of old-world charm when I first visited it many years ago. Midsummer was at its fairest; the weather was such as my old mathematical tutor at Oxford, Lewis Carroll,[1] described in his own inimitable gibberish:—

> 'Twas brillig, and the slithy toves
> Did gyre and gimble in the wabe;
> All mimsy were the borogoves,
> And the mome raths outgrabe.'

It was an old Scottish garden, four-square and spacious, within lofty walls of red freestone. Everything was rectangular; broad grass paths crossed at right angles in the centre, and the flower-beds were but wide strips of border in front of the kitchen stuff. Not a romantic design, you will say; a total absence of any attempt at effect; but age had so dimmed the masonry; ancient

[1] Charles Lutwidge Dodgson, died in 1898, aged 66.

mossgrown apple-trees broke so tenderly the border-lines, casting chequered shade across the paths; there were such fascinating nooks within the ample space, with here a choice flowering shrub and there a breadth of bell-flower or scarlet lychnis, that the deftest land-scape gardener could not have heightened the restful beauty of the scene. For me, the special glory of the place was the Madonna lilies. They had spread into broad mats, with sheaves of five-foot stems, their leaves unstained by the foul fungus that so often wrecks our hopes, and the crowded flower-trusses gleamed like friendly ghosts in that summer gloaming.

Before I returned to that place, it had changed hands. A new laird and a new gardener had conspired to polish up the grounds; money had been lavishly spent; gone were most of the old apple-trees, those which remained had been scraped free from moss and lichen, and scientifically pruned; the borders were filled with spoil from distant lands, all scrupulously labelled (as was right enough). But the lilies had been broken up into little clumps set at regular intervals and wilting hopelessly with *Botrytis*. It will need two generations of men to restore the tranquil beauty of that old pleasaunce.

More than fifty years ago I learned my first lesson in the felicitous disposal of herbaceous plants, in the grounds of that Oxford college so paradoxically named New (it was founded by William of Wykeham in 1380!). I have never been there since; but a similar impression is received every time I spend an hour among the borders of St. John's College, so skilfully and lovingly

tended by the Rev. H. J. Bidder. In that secluded paradise lofty trees cast slanting shadows across glades of immemorial sward, and lowlier treasures lurk on every bank and in every sunny recess.

XLIV

Bracken as a Source of Potash

During the four years of war with Germany, what was practically the sole source of the supply of potash—the salt mines of Stassfurt in Saxony—was closed against British manufacturers and farmers, whose industry relies materially upon that mineral. It is true that a method of extracting potash from felspar was set on foot in this country to meet the necessity, but the process is costly, and the demand exceeded the means of meeting it. Accordingly, the Board of Agriculture for Scotland issued a leaflet calling attention to the high percentage of potash contained in bracken. Now it is no exaggeration to say that hundreds of thousands of acres in the United Kingdom, especially in northern England and Scotland, have been rendered useless by the spread of this fern. Nay, in some cases the land is rendered worse than useless; stock fed on land overgrown with bracken often suffer seriously. Ticks swarm in its shelter, and I have known sheep to die with their heads and necks thickly covered with those disgusting parasites. If, therefore, it were found that the recovery of potash from burnt bracken would indemnify the owner or the occupier of land for the cost of cutting and harvesting it, not only would a valuable fertiliser be obtained, but the land might in time be rid of a ruin-

ous growth. For, be it noted, it is only on sound, well-drained land that bracken will flourish. Examine any moorland or unreclaimed hillside, and you will not see a frond on the sour or boggy parts. Nor is it only in the northern counties that this pest has established itself and is rapidly spreading. Driving not long ago from Dorchester to Abbotsbury we passed over Black Down, a wide expanse of what ought to be sound chalk pasture. Hundreds of acres of that breezy upland are covered with a dense growth of bracken shoulder high, showing that the land is of such quality as might bear good crops or be afforested with advantage.

Persistent cutting, year after year, when the fronds are three-parts grown, has been proved effectual in extirpating the fern; but the cost of doing so over wide extent is almost prohibitive, and no direct return can be expected; whereas, if a valuable fertiliser can be secured by burning the fern after it is cut, the land may be rid of a pernicious weed without net loss.

In order to ascertain the true value of bracken as a source of potash, I sent a supply in July 1917 to Professor Henry Greenish, Director of the Pharmacy Research Laboratory in Bloomsbury Square, who kindly undertook its analysis. He reported as follows:—

'I find that the fern when dried in a warm room and completely burnt to a nearly white ash, yields 4·82 per cent. of ash. The ash contains 41·82 per cent. of potash, K_2O. The dried fern itself would therefore yield 2 per cent. of potash, or 50 tons of the [dried] fern would yield about 2·41 tons of ash, in which there would be about 1 ton of potash. If the fern is not quite completely burnt the quantity of ash obtained is higher, and the proportion of potash in it is lower.

. . . For practical purposes you may assume that 50 tons of the dried fern would yield an ash containing one ton of potash. . . . In addition to the potash the ash contains small quantities of soda, phosphates, sulphates, and chlorides. . . I doubt whether, as a source of potash, the fern could compete with other sources, but there can be little doubt that the ash obtained by burning it would form a valuable potash manure for root and certain other crops.'

It seems pretty clear from this that although recovery of potash from burnt bracken would not in itself prove a remunerative proposition, it is worth while to get rid of bracken by cutting it, and securing the fertilisers it contains by burning it and saving the ash. One precaution is essential. Potash in the form recovered by burning being highly soluble, the ash must be scrupulously shielded from rain or wet until it can be stored in bags. Exposure to a single heavy shower would deprive it of all its virtue. This applies equally to wood ash and the ash of garden refuse, which is generally known to be a beneficial dressing for root crops. But the importance of keeping the ash dry is not so generally realised. I found an experienced gardener one day lately, carefully loading a barrow from a pile of ash where some woodland refuse had been burnt. As it had lain exposed for several days to heavy rain, I ventured to express a doubt whether it would do his crop much good, remarking that the potash must all have been washed out of the ash. 'I reckon,' said he, 'there will be some good left in it.'

There is a wide range in the proportion of potash in the ash of various vegetable growths. It is much larger in the twigs and small branches of trees than in

the timber, and Thorpe's *Dictionary of Chemistry* gives the following figures for other material:—

Ash of Potato tops, . .	6 per cent.
„ „ Wheat straw, .	11·5 per cent.
„ „ Hay, . . .	25·6 per cent.
„ „ Bean straw, . .	42·6 per cent.
„ „ Kelp ash, . .	13 to 23 per cent.
„ „ Potatoes, . .	about 50 per cent.
„ „ Beet, . . .	
„ „ Mangold, . .	
„ „ Turnips, . .	

Compared with which bracken ash, as shown above, contains 41·82 per cent. when the fern is cut in July; but in a subsequent letter Professor Greenish informed me that it yielded a higher percentage when cut in September.

XLV

'Nor spring nor summer's bewty hath such grace
As I have seen in one autumnal face.'

Autumnal Colour

It is often asserted that the autumnal colouring of British woodlands depends for brilliancy upon the amount of warmth and bright sunshine of the preceding summer; but to this doctrine my country note-book lends no support.

For instance, the summer of 1912 was miserably cold, sunless, and wet; nevertheless I have it recorded that some of our native trees, which usually remain green till the end of September, did in that year assume full autumn finery before Michaelmas.

The rowan or mountain ash (which is *not* an ash)

was dyed in Tyrian hues; while the true ash, too often overtaken by early frost and stripped while its leaves are still green, had turned clear yellow, presenting an appearance so radiant as to justify Virgil's encomium—*in silvis pulcherrima.*

Now the summer of 1915 has been the very reverse of that of 1912—in south-western Scotland, at least; for in that happy land we had no share of the excessive wet which soaked the hay and endangered the harvest in southern and midland England. Not only so, but it was the third ideal summer which we enjoyed in succession. Autumnal colouring might have been expected to respond in an unusual degree to the lavish sunshine which is supposed to be needful in preparing the pigments. And no doubt it was good, owing mainly to the long tract of calm weather which lasted throughout September till near the end of October. But it would have been better had there not come a very sharp frost, nine and ten degrees even in seaboard districts, on the nights of 4th and 5th October. The leaves of many trees were shrivelled before they had time to turn; of others, the foliage which had already turned, the Norway maple and the beech for instance, appeared as if it had been singed, all the fine colour being quenched. The conclusion to which many years of observation have brought me is that fine autumn colouring depends less on the character of the preceding summer than on the absence of violent winds and early frost.

The splendour of the 'fall' in North America is often attributed to the great heat of the continental

summer; but, in fact, such American trees and shrubs as adapt themselves to British soil and climate forfeit none of their characteristic brilliancy in decay under our cloudy skies and humid conditions. We might have our woods quite as gay in autumn as those of Ontario or Michigan if we chose to fill them with American trees. And what shall be said of the horse-chestnut, a tree known in a wild state only in the mountains of Greece and Albania, where, assuredly, if anywhere else, summer heat is never wanting? Yet no tree lights up more lavishly in a British autumn. As I sit writing here on this fine October morning, I have but to raise my eyes from the paper to rest them for refreshment on an old horse-chestnut of perfect symmetry, one golden glory over all its sixty feet of stature. Most horse-chestnuts, like this one, turn their dying foliage to pure yellow; less frequent, but even more gorgeous, are those whereof the leaves on some of the branches pass into crimson and orange.

Cercidiphyllum Japonicum—there is no English name for it—is one of the most conspicuous trees at this season. It is said to be the largest deciduous tree in Japan; but whether it will ever exceed the dimensions of a shrub in Great Britain remains to be proved. Mr. Bean thinks it will not, having failed to make much of it at Kew, where it was first planted in 1881. I raised some thousands of it from seed in 1906, and, failing to get information about the species, treated the young plants as shrubs; until I happened upon a reference to it in *A Traveller's Notes* by Mr. J. K. Veitch, who describes a specimen near Hakodate

measuring twenty-one feet in girth of bole.[1] Since then we have treated our stock as forest growth; but there is nothing to show yet above ten feet high. Howbeit, even if it never does more than that, it is a notable addition to our hardy list, for, among all the manifold tints of autumn, this is the only tree that clothes itself in bright rose. Positively, its leaves at this season are no unequal match to the petals of that charming thornless rose Zepherine Drouhin. It seems, however, that it will not behave so prettily in all soils, for at Kew its leaves fade into a dingy yellow, with none of the sunset tints that delight us here.

The tree known to the Chinese as Mu-lan-tze, but named unfeelingly by European botanists *Kœlreuteria paniculata*, stands naked by mid-October, but in September it was robed very becomingly in a soft tint of apricot flushed with rose. The pinnate leaves are beautifully formed, and the tree is perfectly hardy in the United Kingdom. There is a good specimen in the Chelsea Physic Garden, the only one I know in London. Of much purer yellow are the fading leaves of American yellow wood (*Cladrastis tinctoria*), well worthy of a sheltered place where it may have a chance of reaching the height of one at Syon, which is registered as sixty feet.

The majority of deciduous trees, whether native or exotic, incline to yellow or russet in their autumnal dress; the more reason, therefore, to arrange places for those which hoist crimson and scarlet colours. Among these it would be difficult to find any to surpass our

[1] Mr. Wilson has since reported a *Cercidiphyllum* in China measuring fifty-five feet in girth.

native rowan and gean-tree; both of which, when once established, will colonise freely by their seed.[1] Equally brilliant in autumn is the American scarlet oak (*Quercus coccinea*) when it gets a fair chance; but this happens seldom, at least on the west coast, for it is the habit of this tree to keep its leaves till very late in November, and they are generally blighted by frost before they turn. This species is quite distinct from the American red oak (*Q. rubra*), with which it is often confused. The red oak grows more vigorously with us than the other, but seldom displays any tints brighter than rich russet.

Among plants of humbler growth that claim attention at this season are *Vaccinium corymbosum* and *Ribes Americanum*. The first of these, being of the Heath family, detests lime or chalk and loves peat. It grows to a height of twelve feet or so; the *Ribes* to one-third of that stature. I know of nothing more brilliant at this season than the intense crimson and scarlet of good examples of these easily grown plants, although some varieties of Azalea run them pretty close, and possess the additional merit of flowering profusely and fragrantly in May. One must not, of course, neglect the many species of *Rhus*, especially as they may be grown on chalk or limestone soil, with which Azaleas will by no means put up. It is not easy to give preference to one species of *Rhus* over others, so delightful is the combined beauty of form and colour in all of them; but had I to limit my choice to three kinds only, they would probably be *R. Osbeckii*,

[1] Mr. H. J. Elwes has noted that the gean or wild cherry propagates itself more by suckers than by seed; but that is because suckers are less liable than seedlings to be choked by herbage.

R. typhina laciniata, and *R. cotinoides*. As regards the first, Mr. Bean remarks that 'it has little autumn beauty with us';[1] which shows that Kew Gardens, notwithstanding their vast resources of skill and experience, do not afford infallible guidance for all parts of the realm. Both in western Scotland and at Middleton Park in the upland of Oxfordshire this Asiatic species stains its broad pinnate foliage with dyes hardly inferior in brilliancy to the deadly Poison Ivy (*Rhus toxicodendron*). The common Stag's-horn Sumach (*R. typhina*) puzzled me for many years until I learned from Mr. Bean to distinguish between the male and female plants, the latter being far the finer owing to its richly coloured fruit. In the form *laciniata* the pinnate foliage is beautifully subdivided. In the splendid *R. cotinoides*, also, I met with disappointment at first, from planting it in soil far too rich for its requirements. It comes to its own, however, if treated the reverse of generously.

The Persian *Parrotia* flushes into fine shades of orange, red and purple; but it does not retain its leaves long after the change of colour, and it has a most provoking habit of sprawling growth, which sets all pruning and training at defiance. It is related to the witch hazel and liquidamber, both of which have fine autumnal colouring.

Of exotic trees that retain their verdure till the later autumn, when our native oaks assume their russet robes and many other trees are quite bare, I may

[1] *Trees and Shrubs Hardy in the British Isles*, by W. J. Bean, vol. ii. p. 394.

mention but three, which display various tints of yellow. First comes the Fringe Tree (*Chionanthus Virginica*), which atones by the profusion of its foliage for failing in this country to produce its quaint white flowers in such clouds as to make it one of the chief ornaments of the woods in the southern United States. Next is the Himalayan *Sorbus vestita*, the finest of the white beams, with great oval, white-backed leaves from five to eight inches long. And lastly, the strange Maidenhair Tree (*Ginkgo biloba*), compared with which, for antiquity of descent, man himself appears but an ephemeral phenomenon—an afterthought of yesterday. The ginkgo has not been found in a wild state anywhere; but the occurrence of its leaves and fruit in the Lias clay at Ardtun, in the Isle of Mull, proves that it flourished in what is now Scotland before the enormous period required for the formation of the chalk. It owes its preservation to our day to the care of Chinese priests, who from immemorial time have planted it round their temples. The theme is a suggestive one, but at present all I have to say is that the ginkgo is quite hardy in this country and turns late to a charming clear yellow.

One more must be added to secure a flame of scarlet in late autumn, and it shall be the North American sorrel tree (*Oxydendron arboreum*, better known as *Andromeda arborea*), though it is not everybody's plant, and requires attention to its peculiarities as a member of the Heath family. Given a well-drained but moist peaty soil, it furnishes a fine succession to *Vaccinium Corymbosum*, which casts its leaves earlier.

Many trees and shrubs which are not mentioned above will occur to the reader as important features in the pageant of autumn. Those I have mentioned are but such as have claimed attention in the course of a woodland ramble. There are, besides, a number of herbs which contribute not a little to the garniture of the season. To mention but two or three—the great spoon-shaped leaves of *Funckia Sieboldi* die off in brilliant yellow, while the long grass-like foliage of *Montbretia* and the flag-like leaves of *Antholyza* turn to orange and russet. Then *Saxifraga peltata*, so curiously unlike the rest of its enormous genus, will light up any wettish ground with great discs of crimson and orange. All these plants are too gross and spread too fast in the borders; the right place for them is the wood-margin and the waterside.

XLVI

A Bungle and a Dilemma

'La pêche est un plaisir roturier,' quoth Porthos; 'je le laisse à Mousqueton'; nor is it difficult to conceive that one of Dumas' immortal Musketeers should disdain a craft wherein success depends primarily on the mood and volition of the object of pursuit. For that is the feature that distinguishes angling from every other branch of field-sport. You may stalk a royal hart successfully without regard to the state of his appetite; grouse and pheasants may be driven headlong over the guns without consulting their inclination or idiosyncrasies; no measures need be taken to beguile the fox before hunting him; but it rests with the salmon or the trout to decide

whether to accept or reject the lure you put before him. Nobody ever knew or heard—at least I never did—of a true angler forsaking the waterside through waning love for it. One of the truest of the fraternity, Tom Todd Stoddart, having sacrificed to this passion a promising career at the Scottish Bar, became the trout-fisher's troubadour—the salmon-fisher's songster—laureate of the lochs. Hear him when his strength was far spent:—

> 'The voice of the city, the whisper of men,
> I hear them, and hate them, and weary again
> For the lull of the streams and the breath of the brae
> Brought down in a morning of May.
>
> 'And I, when to breathe is a burden, and joy
> Forsakes me, and life is no longer the boy,
> On the labouring staff and the trem'rous knee
> Shall wander, bright river, to thee.'

Another and more recent example of veteran devotion was my aged friend Canon Greenwell of Durham, who was ninety-six when he died in 1918. An accomplished archæologist—leading authority on *British Barrows*—he was distinguished above all other anglers by having both a salmon fly—'the Greenwell,' and a trout fly—'Greenwell's Glory,' named after him. Many a fisher has become the eponymus of one or the other, but none other of both, so far as known to me. Only three weeks before his death he wrote me a long letter—twelve sides of large paper—full of angling reminiscences, describing the circumstances of the genesis of 'Greenwell's Glory,' and expressing satisfaction that he had caught some trout in what was to prove his last summer.

From one cause or another, field-sports are apt to

pall with years. The clubs are peopled with ex-fox-hunters; though in fairness it must be admitted that it is the costliness of the chase that has made many of them quit the saddle. As for shooting, it has suffered so grievously from being overdone—from the competitive rage for record-breaking—that it is only young sportsmen who can feel the same ardour as evidently inspired their grandsires, whom it is so refreshing to contemplate in the highly coloured prints of the early nineteenth century as, fearfully and wonderfully attired in tall hats and prodigious gaiters, each of them carries his 'Joe Manton' with a suggestion of zeal in true woodcraft whereof the modern sport has lost nearly all trace. In grouse and partridge driving, as well as in covert shooting, it is the head-keeper, marshalling his vast array of beaters, who alone needs to display sagacity and resource; all that is required of the guns is decent marksmanship.

But let me stick to my text, nor be led into disparagement of any open-air sport, honouring as I do all who, like the Douglas of old, loved rather to hear the lark sing than the mouse cheep. Let angling stand on its merits; though on this matter I may speak only as a fly-fisher. Many there be who thrill to the tremulous float—are not the members of Midland fishing clubs to be numbered by the thousand? Some will be found to maintain that the right guidance of a spinning bait or the conduct of a clear-water worm calls for qualities of head and hand and nerve without which the mere salmon-fisher may fare well enough. It may be so—it probably is—*non ragionam di lor*—one ought only to

write of things he knows. I should cut a very poor figure indeed with a Nottingham winch, a traveller float, and paste for bait.

If uncertainty, as aforesaid, be the source and cause of peculiar charm in angling, it is by no means the only one. There is the mystery of the unseen; the difficulty to be encountered by an air-breathing biped circumventing a legless, but wary, creature inhabiting a different medium. Best of all, perhaps, is the need that takes the angler to the waterside; for it is there that the beauty of every fair landscape culminates—there that beauty may be found even in landscapes that are far from fair. It is so in all parts of our island, be it where the masterful Spey chafes and roars against opposing scarps, or where lucent Itchen lingers among whispering reeds and glides through flowery pastures; be it where water-lilies float their ivory chalices on the dark bosom of some nameless tarn, or where fierce gusts sweep bellowing from the river flank of Stob-a'choire to lash the face of Loch Treig into pale fury. One may be happy without woods and content without mountains, but one need not be a fisherman to weary soon of a scene without water.

In one respect, it must be owned, the fly-fisher is at a disadvantage with the fox-hunter and the shooter—the big-game shooter, at least: it is by the rarest chance that he encounters anything in the nature of adventure. Exciting episode he may fairly expect; but adventure with an element of risk—no. The fox-hunter may meet with it on the first good scenting day; that is why his pursuit has earned and kept the title of the

Noble Science; he cannot hold a good place in a twenty minutes' burst over a grass country without some degree of jeopardy. The big-game shooter takes not only lucre in his hands when he fares forth, but his life also; but the fly-fisher, if he does not leave his luncheon behind, need expect nothing more untoward than the loss of a good fish or a hole in his waders. That, I suppose, is why his craft is known as the Contemplative Man's Recreation.

Once, and once only in the course of a long life, whereof perhaps an undue proportion has been squandered by the waterside, has anything approaching an adventure befallen me in salmon-fishing. Even that should be more correctly described as a dilemma which might have developed into an adventure; and whereas it has already been described in an earlier volume of these notes,[1] it needs no further notice here. Howbeit, having been bidden to spin an angling yarn, I must turn over my old fishing book, which is stuffed with many pleasant memories. But it is a hard world, and I am well aware that, notwithstanding half the Apostles, including one of the Evangelists, were Galilean fisherfolks, people have grown to listen to a fisherman's stories with distrust that they are at no pains to disguise. Wherefore, in choosing an episode for description, I feel that it may disarm scepticism if I take one wherein the narrator played a part far short of heroic. At all events, it may exempt me from the necessity of begging the reader to accept the story as an unvarnished record of fact.

[1] *Memories of the Months*, Third Series, pp. 91-94.

The scene was on the North Tyne in the lowest cast of that fine stretch of salmon water known as Hargroves. It was still, bright weather in early October; the hanging wood which clothes the cliff along the right bank was already shot with russet and scarlet and gold, and the river swept round that majestic curve dark, but clear as a Cairngorm crystal, in just the right trim for my purpose. I had fished the best of the water before two o'clock, and sat myself down in a sandy, sunny nook to discuss a sandwich, somewhat disappointed because the morning's work had been rewarded by only two pulls. True, there were the two fish that pulled safely in the bag, a grilse of 5 lb. from the flurry beside the Roaring Meg (a huge boulder in mid-stream) and a salmon of 13 lb. from the narrows; but I had expected more, for this was water whence, two seasons before, I had landed forty-six salmon weighing 561 lb. in four days and a half.[1]

Having loitered over luncheon I went down to what was called the New Place, a fine holding stream which had lately been cleared of wood and rendered fishable, but which I do not remember to have fished before that day. I had not made many casts before I was into something heavy, which worked steadily across to the far side of the stream. I happened to have a lighted cigar in my right hand; whether it touched and burnt the reel line, or whether the line had been bruised, I know not; but after the fish had taken out 30 or 35 yards thereof, it snapped close to the reel, and

[1] I had to catch the 1 P.M. train at Reedsmouth station on the fifth day, and landed a fish with the last cast.

the free end, slipping quickly through the rings, fell in the water. To fling down the rod and catch the sinking line was the act of a moment. The fish, relieved from the strain, ceased running. Here is where I went wrong. Since that far-off day, I have hand-lined many a big kelt, and it was only lack of experience that caused me to tell my gillie to run fresh line through the rings, which I then knotted to the broken part in my hand. This caused a pretty predicament. When I resumed the rod, the knot prevented me from reeling in, and, of course, I had little control over a powerful fish at the end of 40 to 50 yards of line. I spent a couple of hours—the best part of a fine afternoon—foozling with that salmon; it was getting dusk before it swam obligingly into the shallows on the hither side, and allowed itself to be scooped out—a good fish of 26 lb. It so happens that this was the heaviest salmon I ever killed in North Tyne, but the whole affair was a bungle from find to finish. I console myself with an aphorism by some sententious Frenchman—was it Rochefoucauld?—'Celui qui n'a jamais eu ses moments de folie est moins sage qu'il ne le pense.'

And now, having made a clean breast of my foozle, let me recount another episode in the same part of that fine river. When first I visited it more than half a century ago there lived in a comfortable lodge just at the junction of the North Tyne and the Reed, a retired Indian doctor who has long since joined Hippocrates in the fields of Asphodel. He was a great and successful fisher; when I made his acquaintance in September he had already accounted for one hundred and forty-

The Brownie of the Tyne

five salmon in the current season; but his method of fishing was such as I should have deemed almost prohibitive of success. Every other salmon-fisher that I have known believed in a low point and a fly well sunk; to allow the fly to leave a trail on the surface of the stream is reckoned to denote a tyro, but Dr. B—— (the Brownie of the Tyne, we used to call him) never gave his flies a chance of sinking. And such flies they were! They were all of much the same pattern, and so far as I saw, of much the same size, pretty big (I never *can* remember the numbers on the Limerick scale), immensely overwinged and with thick bodies of rabbit-wool. He always fished with two—a tail-fly and a bob—attached to unstained treble gut, even under conditions of water and sky that seemed to postulate the finest and most transparent strand. Wading very deep for so short a man (he cannot have stood more than five foot six in his brogues) he flung a shortish line straight across the stream, then, raising high his light Castle Connel rod, he brought those fearsome flies tripping and bouncing along the surface after a fashion, one should have thought, better calculated to warn than to wile—to terrify than to tempt—any salmon over which they passed. Howbeit, Dr. B—— killed more fish than any one else on that beat of North Tyne;[1] partly, no doubt, because the river flowed close past his house, and he could choose any

[1] He had command of two excellent casts—Reedsmouth and 'the Doctor's stream,' which he allowed the Duke of Northumberland and his friends to fish, in return for which he had liberty to fish the far greater extent of Hargroves when none of the Duke's party were out.

favourable moment to sally forth. I do not remember, however, to have seen him abroad before the sun was over the mainyard, so to speak.

The principal feature in Dr. B——'s countenance consisted of a pair of immensely long whiskers of the pattern termed 'Piccadilly weepers' in my young days. They were of the hue which a love-sick poet might describe as tawny gold in his mistress's tresses, but which in the present instance it suffices to speak of as sandy. Before going a-fishing, Dr. B—— usually buttoned his waistcoat over these waving appendages; but on a certain day he either omitted that precautionary measure before passing through his garden to the bank of what was named after himself 'the Doctor's stream,' or after he had started fishing one of these whiskers escaped from confinement. Anyhow, this is what happened. The doctor was well up to his armpits in the stream when he hooked a lively fish which ran swift and strong. He had to raise the rod pretty high to keep the reel out of the water; the handle of the reel, revolving rapidly, caught the free whisker, winding it in tightly and bringing the rod close up against the angler's jowl. A pretty fix! The fish, vigorously resenting the stoppage of the line, fought viciously, its every tug and kick telling with excruciating force on the roots of the whisker. Should the doctor ease the pain by allowing the salmon to break away? Never! He might wince, but he was too gallant to flinch. He held on stubbornly to his fish, and brought it ashore in the end; but the whisker had to be shorn close off before he could lay down his rod.

November

XLVII

SUNDAY, 4th November 1919 was, for me, *dies albo lapide notanda*, for a rare treat befell me thereon. It was a bright sunny day, wedged in amid several weeks of storm. I walked down with a friend to the grassy 'heugh' overlooking the Bay of Luce. It is crowned by an ancient earthwork, known locally as the 'Danish Fort,' perhaps not without reason, for a mile of smooth sandy beach that lies below it interrupts the line of impracticable cliffs, alternating with boulder-strewn shore, that stretch away north and south of it, affording just the kind of accommodation required by both the Finngall or fair-haired Norsemen and the Dubhgall or swarthy Danes for running ashore their high-prowed *kyulls*. We sought shelter from the keen northerly breeze in the deep foss that encircles the fort, within which is a post bearing a notice-board to the effect that the place is scheduled as an ancient monument under protection of H.M. Office of Works.

A Noble Bird

After resting a while, I rose to enter the fort, but promptly clapped down; for, just as I looked over the earthen rampart, a peregrine falcon alighted on the top of the notice-board. She (for it was a splendid female bird, not her lesser mate, the tiercel) did not see

me; wherefore, peering cautiously over the mound, I enjoyed the rare privilege of watching at close quarters one of the wariest and keenest-sighted of all birds. I had often seen trained falcons at work and on the wrist, but here was an untamed peregrine within half a dozen yards of me. I beckoned to my companion to join me. Unluckily, he had not realised the situation, and poked his head rashly over the bank. The falcon shot off like a meteor, breasting the strong breeze as her long pinions bore her swiftly along the coast. If falcons have a sense of humour, how they must chuckle over the noisy, clumsy, costly efforts at aviation by us unfeathered bipeds!

Three features distinguish the true falcons from the hawks, namely: (1) the sharp notch on either side of the maxilla, or upper half of the falcon's beak, that of the hawk being smooth or gently sinuated; (2) the iris in the eye of a falcon is always dark, nearly as dark as the pupil, whereas in nearly all hawks the iris is yellow; (3) in the falcon's wing the second and third pen feathers are the longest, while in a hawk's wing the longest are the fourth and fifth. The last may seem a trivial distinction, but it is constant, and suffices to alter the shape of the organ of flight from a pointed wing to a rounded one. Of ten species of falcons admitted to the British list, four are no more than very rare visitors, namely, the gyr falcon, the Iceland falcon, the Greenland falcon, and the lesser kestrel. Three species only are resident in my native Galloway—the peregrine, the kestrel, and the merlin. Even these have become very scarce, owing to game preservers treating them indis-

criminately and unintelligently as vermin. Only the peregrine is capable of doing much damage to game, and does it in such chivalrous fashion as to redeem the act from the category of larceny. For the peregrine scorns to strike at any creature that is not on the wing, disdaining, as a rule, to stoop to crouching grouse or cowering leveret. One of the memories which I think will most surely come to me in my last hour will be the spectacle of this gallant bird soaring high over a windy loch, circling idly but watchfully till a skein of wild ducks flew swiftly across the water; then, like a levin-bolt, the falcon fell, striking a mallard full on the back and sending it stunned into the water with a great splash. A true sportsman, as distinguished from a mere gunner or marksman, should surely feel too close in sympathy with this bold raider to grudge her a share in what is going. 'Her' again, you observe, for in all falcons, goodness knows why, the female is far larger and stronger than the male. Still, it must be owned that the presence of peregrines means a heavy tax on game. So long as I was able to keep shooting in my own hands, I was content to pay that tax, and allowed a pair of peregrines to rear an annual brood alongside of ravens and kestrels on the crags of Cairndoun; but when taxation of another kind rose to a scale beyond all precedent in our country's history, and I was compelled to let the shooting, I could not impose upon the tenant an obligation to protect what he would regard as his natural enemies. Wherefore the peregrines no longer nest on Benbuie, though in winter I often see one or a pair soaring round it as if wistfully

scanning that bold headland as an ideal site for a nursery.

Even the kestrels, I fear, have paid the penalty incident to their warlike mien, for it is hard to persuade gamekeepers that this beautiful little falcon is after no nobler quarry than mice and beetles. It is true that in pre-war days, when pheasants were reared by the thousand in coops, an occasional kestrel became demoralised and took to picking off the tender chicks; in which case no one could blame the keeper in charge for laying the pirate low: but such instances are quite exceptional; as a rule, the kestrel is absolutely inoffensive. Let not the sins of the sparrow-hawk, with her yellow eyes and rounded, but extremely serviceable, wings be visited on useful, mouse-hunting *Falco tinnunculus*, for rest assured that one pair of sparrow-hawks will destroy more game than fifty kestrels.

As for the merlin, the smallest of falcons, her courage is as high as the peregrines, but she cannot tackle anything bigger than a blackbird. Merlins do not soar, but fly, as a rule, much lower than the peregrine and the kestrel, thereby running much greater risk of being shot. The wonder is that the species has not already become extinct in the British Isles; but, as the late Lord Lilford pointed out, the insular race is recruited annually by merlins closely accompanying migrating flocks of finches and larks. In one respect the merlin resembles the peregrine in the habit of frequenting the sea-coast in winter, where the peregrine pursues the larger waders and waterfowl, the merlin the smaller.

XLVIII

The Smelt

One mild November morning I enjoyed the best dish that I can recollect ever to have eaten at breakfast. It was in an excellent little hotel in Creetown. We had been down to the tidal estuary before sunrise to watch the net drawn for smelts (or sparlings, as we call that pretty fish in Scotland), and we carried some of them up to the hotel and had them piping hot on the table before they had been half an hour out of the water. Little may townsfolk understand the delicacy of that fare, for smelts are more perishable than almost any other British fish, and a few hours suffice to dissipate their peculiar aroma. Moreover, owing to the ease with which these fragile little fish become impregnated with the odour of any substance with which they lie in contact, when served on a London dinner-table they are usually flavoured from the wooden cases wherein they have travelled from British or Dutch estuaries. No one, therefore, can have a notion of the subtle toothsomeness of the smelt who has not treated it as we did ours on that far-off morning at Creetown.

Our Scottish name 'sparling' is a variant of the French *éperlan*, and has an advantage over the English 'smelt' in not being liable to confusion with the 'smolt,' or young of the salmon. The name 'smelt' has been erroneously explained as referring to the peculiar odour or *smell* perceptible when a shoal of these fish is hauled ashore, and Artedi (1705-35) must have had this meaning in view when he fixed the

title *Osmerus* upon the genus, from the Greek ὀσμηρός, 'fragrant.' About that fragrance there can be no doubt in the mind of any one who has seen the fish landed. It is perceptible under a gentle breeze at a distance of nearly one hundred yards. Some have compared it to the scent of violets, others to that of cucumbers; but my own olfactories detect in it nothing more refined than the smell of fresh rushes. Like many popular etymologies, the explanation of 'smelt' as signifying a fish that smells or is smelt is utterly wide of the mark. 'Smelt' meant the same in Anglo-Saxon as it does in modern English; but there is no verb 'to smell' in Anglo-Saxon. The scientific name *Osmerus*, therefore, can only take rank as an erudite pun.

Smelts, as we know them in this country, are of purely estuarine habit, ascending the rivers no further than the tidal rise is felt and there depositing their spawn. The creature is of fairy-like beauty when freshly landed, the colour on the back varying from sea-green to palest brown; the sides are faintly tinged with yellow, violet, or rose, shot with silvery gleams; but as the scales are devoid of pigment, the body of the fish is translucent, the bones and internal organs being discernible through the skin.

Small as this fish is, at the time of our visit to Creetown it had been for nearly forty years the cause of much heartburning and some litigation. From time immemorial sparlings had been regarded as white fish, not affected by the laws applicable to red fish—that is, salmon. All or any fishermen might take them as freely as flounders, whiting or other marine fishes. It

was never imagined in pre-scientific days that smelts or sparlings were members of the aristocratic family of *Salmonidæ*, until those meddlesome ichthyologists came along, demonstrating that these small fry were closely akin to the lordly forty-pound salmon and the speckled brook trout, in outward token whereof they bore the badge of the clan—the little adipose or fatty fin between the dorsal fin and the tail. So when in the Salmon Fisheries Act of 1862 salmon-fishing was defined 'to mean and include salmon, grilse, sea-trout, bull-trout, smolts, par, *and other migratory fish of the salmon kind,*' it became clear that sparlings came under that definition, and the exclusive right to take them was vested in the owners of salmon-fisheries, and by them could be conveyed to tacksmen or lessees. In such cases and places as this right was enforced, the white fishers, deprived of their immemorial liberty to catch sparlings, appealed to the Secretary for Scotland, who appointed a committee to inquire and report, nominating the present writer as chairman thereof. We could not, of course, vary the application of the Act of 1862 as regards sparlings, which are undoubtedly 'migrating fish of the salmon kind'; but we reported strongly in favour of a statutory close-time for the protection of this valuable food fish during the spawning season. This recommendation was subsequently approved and reiterated in the Report of the Royal Commission on Salmon Fisheries, 1902, and it is much to be regretted that legislative effect has not yet been given to these recommendations. Every witness before my committee spoke of the urgent need for such a close-

time. Sparling-fishing, once a remunerative industry in the Annan, had been brought to an end through indiscriminate netting during the spawning season, notwithstanding the difficulty of conveying these highly perishable fish to market in hot weather.

In the Cree, another of the Solway rivers frequented by sparlings, the members of an angling association which rented the salmon-fishing became aware of the destruction wrought by the small-meshed nets of the sparling-fishers among the smolts of salmon and salmon-trout descending to the sea in April and May, this being the very period when the sparlings seek the top of the tide to spawn. Consequently, gravid smelts and migrating smolts were hauled out indiscriminately, and however much care conscientious fishermen (and it is rumoured that all net fishermen are not conscientious) might exert in returning the smolts to the water, it was unavoidable that thousands of them should be destroyed for no purpose whatever. The angling lessees, therefore, having acquired a lease of the net fishings also, instituted a close-time extending from 1st April to 1st September, with the cordial concurrence of the fishermen, who had experienced the difficulty attending the transport of sparlings in the summer months.

I have spoken above of the sparling as a valuable food fish. In support of that may be quoted a note which I have of the returns from the sparling-fishing in the Cree when the angling association had control thereof. In the seven months from 1st September 1900 to 31st March 1901, the four fishermen employed

by the said association accounted for sparlings to the amount of £300. But note, that no close-time could have been enforced unless the association had acquired control of all the fisheries in the eight miles of estuary. It is most improbable that the fishermen at all the various fisheries would have refrained from taking advantage over those who faithfully observed a close-time which could not be legally enforced. There is no sounder or more significant etymology than the derivation of our word 'rival' from the Latin *rivalis* —that is, a dweller on a *rivus* or river-bank.

XLIX

Our bay, the southernmost in Scotland, like every other expanse of salt water has been the scene of unnumbered tragedies; but, so far as recorded, only twice has it been the theatre of a naval action. The character of these two actions was so different—the first being a fair fight between chivalrous seamen, the second a dirty, dastardly crime of a class that has drawn a cloud of infamy over the State which caused it to be perpetrated—that perhaps a brief narrative of both these affairs may be of some interest, especially because the Press Censor would not allow any notice to be made of the later of them in the newspapers at the time.

The Bay of Luce

To begin then. In 1759 Great Britain and France had been at war for nearly three years, and it was known that the enemy was making elaborate preparation for the invasion of our country. There lay at Dunkirk a squadron of five French frigates, with troops

on board, under command of an intrepid officer named Thurot, who had inflicted severe loss upon British merchantmen as a privateer.[1] Dunkirk, accordingly, was blockaded by the British fleet; but Thurot managed to slip out one misty night in October, and got clear away. Baffled, however, by storm, he lost one of his ships in the Hebrides, and another was so disabled as to be compelled to return to France. It was not until 28th February 1760, that the remaining three frigates appeared off Carrickfergus in Belfast Lough. What followed is thus recorded in the *Annual Register* for 1760:—

'Thurot landed his troops, now reduced to about 600 men, augmented by drafts from his seamen to about 1000. These he formed on the beach, and advanced to attack the town. Carrickfergus is surrounded by an old wall, ruinous in many places. Colonel Jennings commanded about four companies in the town, mostly of newly raised men, extremely ill provided with ammunition, and no way prepared for this attack, which they had not the smallest reason to expect. However, they shut the gates, sent off the French prisoners to Belfast, and took all the measures their circumstances would admit of. The enemy advanced and attacked the gates. There was no cannon, but the gates were defended by musquet shot until the ammunition was spent. Then the garrison retired into the castle, which, having a breach in the wall near 50 feet in extent, was in no way tenable. They therefore surrendered as prisoners of war, with terms of safety for the town.

'Thurot, as soon as he was master of Carrickfergus, issued orders to Belfast to send him a quantity of wine and pro-

[1] I have it noted, but I know not on what authority, that Thurot's real name was O'Farrel.

visions, he made the same demand to the magistrates of Carrickfergus, which they having imprudently refused to comply with, the town was plundered. Thurot, having victualled and gained as much reputation by this action as could be expected from a fleet which was no more than a wreck of the grand enterprise, set sail and was off.[1] But he had not left Belfast Lough many hours when near the Isle of Man he perceived three sail bearing down upon him. These were three British frigates which happened to be in the harbour of Kinsale when Thurot made his descent. The Duke of Bedford, Lord Lieutenant [of Ireland], dispatched orders to the commander of the frigates to go in quest of the French armament. These frigates were one of 36 guns commanded by Captain Elliot, and two of 32. Such was their diligence and success that they overtook Thurot's squadron before he could get out of the Irish Sea. They were exactly three frigates to three. The French ships were much the larger, and their men much more numerous; but both ships and men were in a bad condition. A sharp and close engagement began. None of the French could possibly escape, and they must take or be taken. Thurot did all that could be expected from the intrepidity of his character; he fought his ship till she had her hold almost filled with water and her decks covered with dead bodies. At length he was killed. The crew of his ship, and, by her example, those of the other two, struck, and were carried into Ramsey Bay in the Isle of Man. This sole insult on our coasts was severely punished, and not a vessel concerned in it escaped. The public, indeed, lamented the death of the brave Thurot, who, even whilst he commanded a privateer, fought less for plunder than for honour; whose behaviour was on all occasions full of humanity and generosity, and whose undaunted courage raised him to rank and merited distinction.'

[1] It had been intended that Thurot's squadron should co-operate with the fleets of Admiral de Constans at Brest and Admiral de la Clue at Toulon; but these had been scattered by the British Admirals Hawke and Boscawen.

Such tribute to a fallen foe, conveyed through the unemotional medium of the *Annual Register*, breathes the chivalrous spirit that animated two great nations, albeit each was bent on the other's destruction. Such was again the mutual purpose of two great nations in the winter of 1917, when, after the lapse of one hundred and fifty-seven years, the Bay of Luce became once more the scene of a sea-fight, with a result as decisive as that which brought gallant Thurot's career to a close. But here is no word of a seaman's sympathy by the victor to record; only the stealthy approach of the assassin, a cowardly blow, inhuman glee in destruction.

Near the close of November 1917 a furious nor'-wester lashed the coast of Galloway, accompanied by bitter cold. The steamship *Main* of Cardiff sought shelter in our bay, dropping her anchor about midnight under lee of the Rhinns promontory. Rough and cold as it was, the course of this ship had been marked by a German submarine, and her doom decreed. About two o'clock in the morning, when all but the watch were asleep in the *Main*, the submarine opened shell fire upon her *without hailing her*. The *Main* carried a gun for defence, but the enemy's fire dismantled it and tore off the gunner's arm before he could use his piece. One of the lifeboats was shattered; the other was launched, in which the captain and crew pushed off, fifteen all told. She capsized three or four times, all hands being washed off and drowned in the heavy sea, except the captain. He drifted about the bay for fifteen hours, until the boat was sighted at dusk passing Port William, finally coming ashore near my house,

and not a mile from the place where Thurot's body had been washed up in my great-great-grandfather's time.

Those in the village who had viewed the boat as she drifted past in a water-logged condition, with the sea continually breaking over her, saw that there was a man in her, but never imagined that he could have survived exposure to such a storm. What was their surprise, therefore, when the boat grounded on the shingle, to see him rise, and to hear him speak. I am told that the first words he said were—'Is there ony person here can gie me claiths? I had to put off my coat to swim the lighter.'

He was an immense man, a native of Campbeltown, weighing twenty-two stone. In our doctor's opinion it was his shield of fat that alone enabled him to survive the long-drawn horrors of that night and day.

If an excuse must be sought for including this bald narrative in my memories of the month of November, it may be found in the fact that, although no doubt the fate of the *Main* and her crew lie duly recorded in some pigeon-hole at the Admiralty, no public announcement thereof was permitted at the time.

Reverting for a moment to the action between the squadrons of Elliot and Thurot, it is matter of lasting regret that I have failed in all endeavour to recover the words of a ballad recounting that adventure which, as a lad, I heard an old fisherman at the Mull of Galloway repeat. But the story lives among the descendants of those who witnessed the fight. Certain flattened globular nodules of iron pyrites which are occasionally found on the beach, washed out of the Silurian shales

by the action of the waves, are, or were in my boyhood, popularly reputed to be balls from the guns of Elliot and Thurot.

L

The Waxwing

The autumn and winter of 1921-22 will be remembered in British ornithology for the great number of waxwings (*Ampelis garrulus*) which visited our island. Not since 1849-50, when five hundred and eighty-six specimens were observed and recorded in *The Zoologist*, has this beautiful bird been reported from so many districts. Four of them had the grace to make a brief—too brief—sojourn in the woods of Monreith.

Of all migratory species that alight in Great Britain, the waxwing is the most irregular; indeed, it is as capricious and erratic in its choice of a nesting-place as it is in its winter wandering. Although in some seasons it may be seen in Central Europe and in North America in countless flocks, actually it was not until 1856 that nests and eggs were first discovered by the late Mr. John Wolley, who organised a systematic search for them in Lapland. Two years later, in 1858, Mr. Dresser found a small breeding colony on an island in the Baltic; since which nests have been certified on the Yukon and Anderson rivers in North America. But the establishment of a populous nesting company in any locality one year is no guarantee that there will be a single brood reared there in the following season. Most migratory birds exhibit singular fidelity in returning year after year to the same place to nest; not

so the waxwing, which seems to be guided by sheer chance in the choice of a spot.

To use a Scots expression, few birds are more 'kenspeckle'—that is, easy of recognition—than the waxwing. About the size of a thrush, the colour scheme is much the same in both sexes, being only slightly less bright in the female than in the male. The distinguishing feature which has earned for the bird its popular English name consists in the shafts of four or five of the secondary wing feathers being prolonged and expanded into a flattened knob resembling scarlet sealing-wax. The purpose of this singular process seems to be purely decorative, which it certainly fulfils; but the Eskimo put a sinister interpretation on it, declaring that these appendages are the clotted blood of the waxwing's victims; wherefore they have given it a name signifying in their language 'the small-bird killer.' The imputation is quite groundless, for the waxwing is believed to subsist on insects in summer and on berries at other seasons.

LI

Except to students of Scottish topography and bibliography, the name of Timothy Pont probably conveys but a faint impression, if any, to the present generation of his countrymen; but any one who, like myself, attempts to visualise Scottish landscape as it was three hundred years ago, will hold that name in honour as having been borne by one who undertook an enterprise of no common magnitude, and carried it through in the teeth of prodigious difficulties.

Timothy Pont

Timothy Pont was born about 1565, the elder son of the reformer Robert Pont (1524-1606), who himself was no ordinary minister of the Presbyterian Church of Scotland, but became Provost of Trinity College, Edinburgh, was thrice Moderator of the General Assembly, and, in addition, achieved unique distinction among the reformed clergy in being appointed by the Regent Mar a judge of the Court of Session. His son Timothy matriculated at St. Leonard's College of St. Andrews in 1580, graduating as M.A. in 1584. He had been educated for the Church, but his natural bent was for mathematics rather than for divinity. Howbeit, in 1601 he was appointed minister of Dunnet, the northernmost parish of the Scottish mainland; but at some time between 1610 and 1614 he resigned the living in order to apply his full energy to the project he had conceived of executing an atlas of Scotland. It was most unusual in those days for a poor student to embark upon any great enterprise without obtaining the support of a patron; but Pont could secure no such aid. Robert Gordon of Straloch, who, many years after Pont's death, undertook the preparation of his maps and manuscripts for publication in Blaeu's monumental atlas of the world, states sympathetically that he—Pont—'being of slender means and with no Mæcenas to help him, took the whole task [of a survey of Scotland] upon himself before his fortieth year.' It is not known in what year he began the work. Probably he finished the survey of much of the northern Highlands and Islands during his incumbency of Dunnet; otherwise it seems impossible that he could accomplish

what he did in the short time between his resignation of the living and his death, which seems to have been in or soon after 1614. We are not informed whether he had any assistant or companion in his peregrination of Scotland; we know not what instruments he possessed; this much only is certain, that, to quote the words of his posthumous editor, Gordon:—

'He perambulated the whole of this realm afoot, which none had ever done before; he explored those islands which were inhabited by hostile and barbarous people as well as the most civilised ones, and heard a language different to ours. He was often robbed, as he used to tell me, by savage brigands, and often suffered the ills of unsafe travel; yet he never lost heart nor was beaten by difficulties.'

To form any notion of the nature and extent of those difficulties, one must visualise the Scottish Highlands as they were at the close of the sixteenth century, when Scotland was still a separate monarchy. The glens, indeed, were far more populous than they are now, but subsistence was extremely precarious, cattle-lifting and raiding being the recognised means of relief in seasons of scarcity. There were no roads, only bridle and pack-horse tracks; and although the clansmen, as a rule, were very hospitable to strangers (a virtue which remains conspicuous among their posterity, as the present writer can testify from experience), Pont must often have been hard put to it for food and shelter, and have found it no simple matter to protect his charts and drawing materials, even from summer storms, in such desolate regions as the Monadh Liath, the Moor of Rannoch, and the wind-

swept wastes of Sutherland and Caithness. Nothing is known of the method he employed in surveying. The maps are beautifully drawn, crowded with names, and with the land features clearly indicated. The marvel is, not that there should be some errors in distances and contours, but that these should not be more obvious and frequent. Pont had not the facilities enjoyed by modern surveyors using scientific instruments; we know not whether he worked by the astronomical or trigonometrical method; if by the former, the work must have been interrupted by long intervals of cloudy weather; if by the latter, it is difficult to understand how, in so mountainous a country, he obtained triangulations even approximately correct within the limits of time occupied in his survey.

Admitting that Pont's maps fall far short of accuracy, he must be recognised as the pioneer in Scottish cartography. He enabled his countrymen for the first time to become acquainted with the general shape of the kingdom, the relative position of the adjacent islands, the course of rivers, the mountain ranges and such forests as had survived fire and the axe. Students of place-names will find abundant suggestion in their phonetic rendering which he used. To take an example at random from my own neighbourhood—there are two places named, according to modern orthography, Bardrochwood, one in Carrick on the River Stinchar, the other in Galloway on the Moneypool Burn. Written thus, the name bears a sylvan suggestion; but in fact it has nothing to do with 'a

wood.' Pont writes it Bardrochat, giving the sound of the Gaelic *barr drochaid*—the hill by the bridge, which is the true meaning.[1]

Bitter must have been Pont's chagrin when, having finished his great work, he failed in means to get his maps engraved. That would have been the moment for a far-seeing Mæcenas; but King James had moved his court to London, taking with him 'Jingling Geordie'[2] and almost every Scots capitalist, and leaving his ancient realm distraught by the fury of sects and virulence of faction, besides being racked by excessive poverty. The literary noon of Edinburgh was still far below the horizon. Gordon of Straloch, writing forty years later, blames the niggardliness of 'the trade' for Pont's disappointment;[3] but the most enterprising publisher might surely hesitate to embark on a work of such magnitude, having regard to the disturbed state of the country and the prevailing indigence. 'While awaiting more propitious days,' says Straloch, 'untimely death carried him off.' If, as may be surmised, this was about the year 1614, Pont must have been about fifty. Only one of his maps is known to have been published during his life, entitled *A New Description of the Shires Lothian and*

[1] When a fresh ordnance survey was being conducted in this district some years ago, I obtained the consent of the owner of Bardrochwood on Stinchar to allow the name to be rendered as Bardrochat on the new map; but the owner of Bardrochwood on Moneypool declined to agree to the change, and the name remains as before.

[2] George Heriot, the king's jeweller and financier.

[3] Typographorum et librariorum avaritia victus.

Linlithguo; all the rest of his papers passed to his heirs, described by Straloch as *homines ad hœc inepti* —men of no wit in such matter—who allowed them to be damaged by vermin and neglect.

When the 'salmond-like instinct' of King James at length brought him back to Edinburgh in 1617, he heard of the valuable collection, and directed that it should be purchased from Timothy's heirs; but this was not done, it seems, for Straloch declares that the papers and maps passed into the hands of certain persons who were determined to keep them from the public. There they lay, through the troubled years that followed, until Sir John Scot of Scotstarvet (1585-1670), a leader to be honoured in the revival of Scottish literature, got hold of them, and committed them in 1642 for revision by Gordon of Straloch and his son James, parson of Rothiemay, who prepared them for publication in the great atlas by Blaeu of Amsterdam.

Pont's work could not have been entrusted to more competent and sympathetic editors. Aloof from the convulsion of civil war, father and son applied themselves to the congenial task, until in 1645 Sir John Scot took the papers to Amsterdam intending to superintend their publication personally. Six years had still to run before they were produced in the fifth volume of Blaeu's Atlas, under due privilege of the Emperor Ferdinand III. and Oliver, Lord Protector of the Commonwealth. Had Pont but survived to behold this noble folio, meet crown to his life-work, how eagerly he would have opened the volume—how tremulously with just pride would he have turned

over page after page, enchanted with the splendid typography and ample margins.

It was not to be. Timothy Pont's strenuous labours and frustrated hopes might have furnished a chapter in Isaac Disraeli's *Calamities of Authors*. All the more reason, therefore, for Scotsmen of the twentieth century to join in the tribute pronounced by the parson of Rothiemay on the value of Pont's unrequited service to science, and to endorse the verdict that 'it would be an act of utmost ingratitude to allow the memory of this man to sink into oblivion.'

There is a story in Wodrow's *Analecta* about Timothy Pont's father, a man of much learning, who declined the Bishopric of Caithness to which King James nominated him. It is there stated that he 'had a discovery of Queen Elizabeth's death that same day she died'; that he sent to the King in Holyrood late at night, insisted on being admitted to his presence, and saluted him as King of Great Britain, France and Ireland.

'I still told you,' said the King, 'that you would go distracted with your learning, and now I see that you are so.'

'No, no,' persisted Pont, 'I am not distracted. The thing is certain. She is dead, I assure you.'

Wodrow refrains from committing himself to either theory—that Pont drew his intelligence from the stars, or that he received direct revelation.

December

LII

Army Uniforms—Past and Present

Among the memories of a somewhat distant past one was revived in the autumn of 1914 by the sudden suppression of scarlet and blue in the uniforms of the British Army, and the more gradual transformation of hundreds of thousands of young and middle-aged civilians into khaki-clad warriors. The sweeping change from parti-coloured raiment recalled an amusing musical extravaganza called *The Happy Land* which was staged in London in the early 'seventies. The scene was laid in Paradise; among the principal characters were poignant and clever caricatures of the Prime Minister, Mr. Gladstone, of the Chancellor of the Exchequer, Mr. Lowe, and of the First Commissioner of Works, Mr. Ayrton. The piece had but a short, though brilliant, run in the metropolis, for the Lord Chamberlain prohibited the performance, not on the ground of what is usually implied by immorality, but because it brought Her Majesty's Ministers into contempt by merciless burlesque of their persons and performance. It is not known, to me at least, which of the three victims set the censorship in motion. It could not have been 'Bob' Lowe, who was gifted with a fine sense of

humour. Popularly it was believed to be Mr. Ayrton, who was not only more mercilessly satirised in the play than either of his colleagues, but also had outraged public feeling, if not public taste, by certain of his administrative acts as ædile; notably by covering with grey paint some of the fine stone-work in the lobbies of the Houses of Parliament. All that I remember of the libretto of *The Happy Land* is that, whereas in the first act the scenery of Paradise was glowing with rainbow radiance and shimmering with gems, in the second act it had undergone treatment on Ayrton principles—everything had been painted 'government grey.'

All this was brought to mind by the change wrought upon the appearance of the British Army after the outbreak of the South African War in 1899. By a wave of his wand or—as a wand is not one of the insignia of his office—by a scratch of his pen, the Secretary of State for War, Mr. St. John Brodrick (now Earl Midleton), quenched all gay colour in the field dress of our troops: the historic thin red line was to be seen no more; the glittering squadrons were doomed to ride in raiment as dull as the dust of their own raising; henceforward, standards and colours were to be sent into store before the regiments went on active service.

Had that been all, it would have sufficed to mark a notable era in the operations of war—a wise measure, imposed upon the Army Council by the vast improvement in the range, trajectory, and precision of artillery and small-arms. Hitherto it had been the object of the military authorities of all nations to make their

fighting men as conspicuous as possible, exaggerating their stature by fantastic headgear and setting them in strong relief to every variety of natural background by means of bright colours and pipeclay. The Brigade of Guards landed in the Crimea without their knapsacks, which followed in another ship. The men had to do without them for some weeks ; but the cumbrous bear-skin caps were considered indispensable, and offered a fine target for the Russian defenders of the slopes of the Alma. The hint was thrown away upon our military authorities. It required a sharper lesson to convince them of the cruel absurdity of figging out men for battle in a dress that hampered the limbs and obscured the eyesight. The Guards were not more absurdly dressed on that occasion than the rest of the British troops. The late Sir William Flower described to me his feelings when, as surgeon of an infantry regiment, he stepped out from a boat on the wet sands at the mouth of the Alma, dressed in a skin-tight scarlet coatee with swallow tails, a high collar enclosing a black stock, close-fitting trousers tightly strapped over Wellington boots, and a cocked hat!

Two years before that—in 1852—Colonel Luard published his *History of the Dress of the British Soldier.* Having served as a heavy dragoon in the Peninsula, as a light dragoon at Waterloo, as a lancer in India, and as a staff-officer both in India and at home, he had practical experience of the variety of torment inflicted by different kinds of uniform. He advocated many reforms in the soldier's dress, tending as much to increased efficiency as to comfort, and he supported

his argument by extracts from his correspondence with regimental officers. One of these wrote—'If an infantry soldier has to step over a drain two feet broad, he has to put one hand to his cap to keep it on his head, and his other to his pouch, and what becomes of his musket?' And this, be it remembered, was the fighting-kit; for no general in those days ever dreamed of taking troops into action except in full review order.

James I. was not a warlike king, but he was a pretty shrewd observer of men and matters. He was not far wrong when he observed that plate armour was a fine thing, for it not only protected the life of the wearer, but hindered him from hurting anybody else! Like censure might have been applied with equal justice to the clothing of British soldiers in the Crimean campaign, except that it afforded no protection to the wearer's life or limb. It required nearly one hundred years to convince the War Office that it was cruel stupidity to send men on active service in clothing so tight as to fetter the limbs and compress the chest. That was the legacy of George IV. to the British Army.

Although to one looking back over the history of what is now the United Kingdom, the most salient and chronic features seem to be campaigns and battles, invasion and counter-invasion, it was not until the Civil War that any attempt was made towards a uniform dress for any army. It is true that both the English and Scottish Parliaments prescribed the offensive and defensive armour with which every able-bodied subject was to provide himself or be provided by his feudal chief, and if that chief were a wealthy baron his con-

tingent would be clothed in his liveries. Pitscottie describes in deliciously quaint phrase the famous scene at Lauder when Archibald Douglas, fifth Earl of Angus, earned his sobriquet of Bell-the-Cat. He tells how the luckless Thomas Cochrane, newly created Earl of Mar, rode down to the kirk where the disaffected lords were in conclave, at the head of three hundred men all dressed in his livery of white doublets with black bands. Cromwell was the first ruler of England who succeeded in what several of his predecessors had failed—in maintaining a standing army. At one time he had 80,000 men under arms, with some degree of uniformity in the dress of cavalry and infantry. It consisted mainly in buff coats, with breast and back pieces, iron caps and other defensive armour. But that army was disbanded after the Restoration, and it was not until the reign of William III. that a standing army was finally established, and colonels commanding regiments, being allowed a sum sufficient for clothing the men, were required to do so according to sealed pattern.

Throughout the eighteenth century the British soldier's dress, though fantastic, was, on the whole, both picturesque and comfortable. In cut, it conformed pretty closely to the fashion prevailing among civilians, though there occurred an interval when George II. inflicted upon his Guards regiments the preposterous conical hat, copied from the Prussian Guards of Frederick the Great. This disfiguring headgear did not last very long, and gave place before the end of the century to the three-cocked hat of the style called, I believe, Nivernois or Kevenhüller.

Officers' uniform of The 26th Cameronian Regiment

The easy grace of the full-dress uniform of an officer of the Guards towards the close of the eighteenth century is admirably shown in Romney's portrait of John, tenth Earl of Westmorland, now at Osterley Park. It shows a long-skirted scarlet frock, lined with white, faced with blue, with ruffles at the wrists, and without any ornament save a pair of gilt epaulets of moderate size and soft material, very different from the cumbrous, unyielding things now prescribed for naval officers and lords-lieutenant. The frock is worn open over a Ramillies cravat and waistcoat and breeches of white kersey. It would be difficult to devise a dress for a soldier so well combining comfort and dignified distinction. To one feature only can objection be taken. The powdered and curled hair, clubbed in a pigtail, looks charming on Romney's canvas, but must have proved an intolerable nuisance both to officers and men.

'During the command of the late Duke of Kent at Gibraltar [1802-3], when a field-day was ordered, there not being sufficient barbers in the town to attend to all the officers in the morning, the seniors claimed the privilege of their rank; the juniors consequently were obliged to have their heads dressed the night before; and to preserve the beauty of this artistic arrangement—pomatumed, powdered, curled and clubbed—these poor fellows were obliged to sleep on their faces! It is said that in the adjutant's office of each regiment there was kept a pattern of the correct curls, to which the barbers could refer.'[1]

The men wore tunics of a cut similar to those of the officers, but of coarser cloth. They were buttoned up on duty, the skirts being looped back. It was a

[1] *A History of the Dress of the British Soldier*, by Lieut.-Col. John Luard, 1852.

thoroughly sensible and workmanlike dress, giving perfect freedom to breathing and circulation, together with protection to loins and thighs. The Chelsea pensioners wear a coat of the old infantry pattern to this day.

With the Regency came a vicious change. The Prince Regent paid incessant attention to dress—both to his own and that of others. He was proud of his figure, which, indeed, was a fine one till it was ruined by excess, and he loved to display it in closely-fitting dress. Nor was he content until he got his father's army buttoned up to the limit of endurance and disfigured by headgear of appalling dimensions. The easy open collar and Ramillies cravat were replaced by an upright fence of buckram and a leather stock. It would hardly be credible, if the copious correspondence of the Horse Guards were not there to prove it, that at a time when Wellington's whole faculties were absorbed in manœuvring against immensely superior forces in Spain, he had to answer letters about the changes in the dress of the army, not with a view of making it more comfortable and workmanlike, but in order to gratify the caprice of the Prince Regent. No man ever gave less thought to niceties of tailoring than Wellington. His views are set forth in a letter to the Military Secretary, who had been instructed to consult him about the uniform to be worn by those regiments of Light Dragoons which the Prince Regent had desired the Duke of York (recently reinstated as Commander-in-Chief) to convert into Hussars.

FRENEDA, *6th November* 1811.

'. . . There is no subject of which I understand so little [as military uniforms], and, abstractedly speaking, I think it indifferent how a soldier is clothed, provided it is in an uniform manner, and that he is forced to keep himself clean and smart, as a soldier ought to be. But there is one thing I deprecate, and that is any imitation of the French in any manner. It is impossible to form an idea of the inconvenience and injury which result from having anything like them, either on horseback or foot. Lutyens and his picquet were taken in June because the 3rd Hussars had the same caps as the French *Chasseurs-à-cheval* and some of their Hussars, and I was near being taken on September 25 from the same cause. At a distance or in action colours are nothing; the profile and shape of a man's cap, and his general appearance, are what guide us; and why should we make our people look like the French? . . . I only beg that we may be as different as possible from the French in everything. The narrow tops of our infantry, as opposed to their broad-top caps, are a great advantage to those who are to look at long lines of posts opposed to each other.'

Two years later, at the battle of Vittoria, the justice of this remonstrance received apt illustration. Wellington on that day kept the Light Division and 4th Division under his immediate command. The 3rd and 7th Divisions, under Picton and Lord Dalhousie, were to join him in order to complete the centre of the line, but they had difficult ground to traverse, and were late. The Zadora flowed swift and deep in front of the French position. A countryman having informed Wellington that the bridge of Tres Puentes was unguarded, Kempt's riflemen were sent forward to seize it, which they did, and went so far up the heights on the farther side that they were able to establish them-

selves in shelter of a crest well in rear of a French advanced post. There they lay, until Wellington's line was completed by the arrival of 'Old Picton, riding at the head of the 3rd Division, dressed in a blue coat and a round hat, swearing as loudly all the way as if he wore two cocked ones.'[1] The 7th Division came up at the same time, and while they were deploying the enemy opened fire upon them. Kempt immediately drew his riflemen from their shelter and took the French batteries in flank, thereby enabling the 3rd Division to cross the bridge of Mendoza without loss. But the dark uniforms of the Rifles deceived the British on the other side of the river into the belief that they were French. A battery opened upon them and continued pounding them with round shot and shrapnel till the advance of Picton's Division revealed the blunder.

Wellington's warning against copying the uniforms of other nations received little attention. After 1815, when he was in command of the Army of Occupation in Paris, it was decided to arm four regiments of cavalry with lances, a most effective weapon which had not been carried by British troops since the seventeenth century. One would have supposed that the lance might be wielded as effectively by a man dressed as a light dragoon or a hussar as in any other rig; but the Prince Regent hailed the innovation as an opportunity for an entirely new costume. Consequently the 9th, 12th, 16th and 23rd Light Dragoons were put into a Polish dress, modified in such manner as to agree with his Royal Highness's sartorial taste.

[1] Kincaid's *Adventures of the Rifle Brigade*, 3rd edition, p. 222.

'An officer of rank commanding one of the Lancer regiments was ordered to attend the Prince Regent to fit the new jacket on him. The tailor, with a pair of scissors, was ordered to cut smooth every wrinkle and fine-draw the seams. The consequence was that the coats of the private soldiers, as well as those of the officers, were made so tight they could hardly get into them; the freedom of action was so restricted that the infantry with difficulty handled their muskets, and the cavalry could scarcely do the sword exercise.'

The cuirass had been discontinued in the British cavalry since 1794, when its unsuitability for active service had been amply demonstrated in the Netherlands campaign. But it was far too showy a piece of goods for the Prince Regent to allow to disappear. Accordingly the three regiments of Household Cavalry appeared at his coronation in 1820 in steel cuirasses and burnished helmets, with enormous combs of bearskin; the latter, as Colonel Luard caustically observes, rendering it impossible for a man to deliver the sixth cut in the sword exercise of that day. The cuirass and helmet, with the unwieldy jackboots and white buckskin breeches, remain, after the lapse of a century, archaic features in a theatrical pageant which Londoners have learnt to love; but as the equipment of a modern soldier the costume is ludicrously inapt and very costly. In an era when war has become more terrible and more intensely destructive than in any previous age, and now, when the whole resources of the Empire have been strained to hold its own, it may well be asked whether money could not be more profitably employed than in causing the splendid men of the

Household Cavalry to masquerade in such attire as it would be grotesque to imagine them wearing in modern warfare.

About the same time as the cuirass was inflicted on the Household Cavalry, the sentry-boxes in London and at Windsor Castle had to be increased in height in order to accommodate a new pattern of bearskin cap which had been approved for the Foot Guards. The old pattern, which had superseded the three-cocked hat at the end of the eighteenth century, was a sensible affair of reasonable dimensions; but the army tailors had their ingenuity in devising extravagant uniforms stimulated by the new king, and the bearskin was caused to shoot upwards several inches. 'Ridicule,' observes Colonel Luard, 'subsides when the eye is no longer a stranger to the object of excitement; otherwise the little boys would run after the guardsmen when they appear in the streets of London, and shout at the overwhelming, preposterous, hideous bearskin caps.' It is rumoured that the supply of the right sort of bear is running short. It may not be an extravagant hope that the return of the Guards Division victorious may be marked by the invention of a full-dress uniform for them more rational and comfortable than a skin-tight tunic and a head-dress out of all proportion to the human frame. Londoners, intensely and laudably conservative in what they have become used to, would be the less likely to murmur at the reform inasmuch as they have grown accustomed during the War to see guard-mounting performed in forage-caps.

Among all the variety of uniforms of the British infantry, none has undergone so little change in the last hundred and fifty years as that of the Highland regiments. That is well, for there is none other that so admirably sets off a soldier-like figure, none that stirs so much enthusiasm among the spectators at a field-day. So fully has this been recognised that a society has recently been formed to protest against and endeavour to remedy what is deemed the unmerited neglect of Lowland Scottish regiments, whereof the records certainly are no whit inferior in lustre to those of the Highland corps. It is complained that the Lowland regiments are always kept in the background; that Edinburgh, though a Lowland city, is invariably garrisoned by a Highland regiment, and that facilities for recruiting in Edinburgh and Glasgow are accorded to Highland regiments and refused to Lowland regiments. Much of this is unfortunately true; but the real reason for it exists in the greater popularity of the Highland uniform. No amount of protest or persuasion will prevail to make the general public take the same interest in a trousered regiment as in a kilted one. Might not the surest remedy be to put the Lowland regiments also into kilts? Purists will object that Lowlanders have no business to don the philabeg; but, for that matter, neither have they any business to wear tartan trews, *which all the Lowland regiments do at the present time, besides being furnished with kilted pipers.*[1] Then all Scottish infantry would be on equal

[1] See report of the meeting of the Association of Lowland Scots held in Edinburgh on 25th November 1915.

terms in the matter of uniform. It is difficult to understand, impossible to explain, the emotion—involuntary, as all true emotion must be—roused, even in Saisneach breasts, by the sight of a Highland regiment marching to the skirl of the pipes. In order to illustrate it, let me lapse for a moment into the first person singular.

During Queen Victoria's memorable progress through her metropolis in the Diamond Jubilee of 1897, I was seated with two ladies of my family in the stand set up for members of Parliament in Palace Yard. The long hours of waiting on that shining summer forenoon were enlivened by the march of many regiments, headed by their bands, passing to their appointed places in the route. It was a shifting pageant of stirring sight and sound. Presently, over Westminster Bridge came the Seaforth Highlanders stepping to the lively strains of *The Muckin' o' Geordie's Byre.*[1] The effect was indescribable—the swing of kilt and sporran, the dark drooping plumes, the gallant but simple melody, thrilled all spectators. As for myself, I felt a big lump in my throat, and I was ashamed to feel something trickle down my cheeks. Yet am I a Lowland Scot, if any one is; so far as I can trace my pedigree, there runs in my veins no drop of Celtic ichor. If such as I was so deeply stirred by the passing of a single Highland battalion, why should not all the Scottish regiments be clothed in the garb of Old Gaul—as romantic as it is serviceable—with the desirable result of rendering the Lowland corps as popular

[1] An old air, subsequently set to the song *My Tocher's the Jewel.*

as the Highlanders? This would be esteemed a privilege by the former and a compliment by the latter. Objection might be raised on the score of economy because of the cost of the full-dress bonnet draped with ostrich plumes, which, though picturesque, is but a tailor's parody of the bonnet of a *duine-uasail* with its eagle's feather or blackcock's tail. Let the Lowland regiments be content with the blue bonnets which used to swarm over the border of yore. Nobody who has seen a battalion of the London Scottish marching down Pall Mall and listened to the comments of those whom the skirl of the pipes summon to crowd the club windows will tell you that this splendid corps would gain anything in soldierly appearance by donning feather bonnets. That head-dress was condemned officially in 1882, but in deference to Queen Victoria's wishes it was promptly restored. Its abolition had been hotly challenged in the House of Commons by certain perfervid Scots—*quorum pars parva fui*—one of whom volunteered a quaint explanation to another honourable member's doubt about ostrich feathers being appropriate to the equipment of a Scottish Highlander. He gravely assured the House that the decoration had its origin in Sir Ralph Abercromby's Egyptian campaign in 1801, when the Highland soldiers picked up ostrich feathers in the desert and stuck them in their bonnets as protection from the sun!

The fact is that the feather bonnet, and all other exaggerated and costly head-gear, should be as resolutely relegated to limbo as the hideous masks worn by

the fighting men of Old Japan. The first were designed to overawe the enemy by making soldiers look taller than they were, the second to render them fiercer in aspect; devices equally futile in days when the primary object of commanders is to keep their men out of sight till the order is given 'Over the top!'

While it is hardly possible to imagine any dress better calculated to impede a soldier's movements than the uniforms inflicted upon all arms of the service during the early years of the nineteenth century, one should not overlook the relief that was ordained in a detail that was a source of constant unnecessary trouble to the soldier. Clubbed pigtails had been transmitted as an irksome legacy from Marlborough's army, until in 1808 the Horse Guards decreed their abolition. When Sir Arthur Wellesley landed in Mondego Bay on August 1-5 in that year, one of his first orders was that these senseless, dirty appendages were to be cut off. Never, one may believe, was an order more cheerfully obeyed. A counter-order was issued shortly after from the Horse Guards, requiring the retention of pigtails, but it was beyond the power of man to comply with it. It was easy to cut off pigtails, but they could not be replaced; and now the only vestige of a barbarous fashion in the army remains in the 'flash' of black ribbon worn by officers of the Welsh Fusiliers at the back of the collar of the tunic.

Unfortunately, the irrational fashion of tight clothing for the army instituted by the Prince Regent endures to this day. It is true that a sensible field-dress of khaki was devised and worn during the South

African War, and is now the service dress of the army; but the full dress for officers and the 'walking-out' uniform for men is still cut and fitted on the old excruciating lines. I think it took three weeks to fit a young friend of mine, joining a battalion of Guards a few years ago, before the adjutant of that *corps d'élite* passed the tunic as satisfactory. Every crease and wrinkle had to be obliterated, at such cost to freedom of limbs and lungs as may be imagined. It may not be an extravagant hope that, when our army returns once more to a peace footing, the full dress may be designed with more regard to health and comfort than hitherto.[1] Our eyes have grown accustomed during the present war to seeing soldiers in a costume, far from beautiful, indeed, but easy and respectable. There is no reason why a scarlet coat should be less comfortable than a dust-coloured one, and it will be a sad thing if the historic red of the English infantry is not preserved for full dress. But even if it were not, the khaki uniform might be rendered very becoming by the addition of a little modest ornament, especially by the restoration of the old regimental facings. These would not make troops one whit more conspicuous in the field; on the contrary, it is a commonplace of optics that parti-coloured objects are less easily detected in a landscape than those of one uniform colour.

One desirable result might follow upon making uniform more comfortable to the wearer; officers might no longer think it etiquette to exchange it for mufti the moment they are released from duty. Alone

[1] This hope remains unfulfilled.

among the nations of Europe has the British officer hitherto treated his uniform as if it were something to be ashamed of in private life. It is an unseemly, even an unhandsome practice, seeing that non-commissioned officers and privates are not allowed to disport themselves in 'private clothes.' Nor was it the custom among officers in the eighteenth century, when military uniform was as easy and becoming as any other dress. The usual attire of an officer, even when on leave, was his undress uniform, just as it is used in Continental armies. The change in British practice was the direct outcome of the Prince Regent's tyranny in buttoning soldiers up to the chin in clothes that it was a torment to wear.

It must be owned that the Duke of Wellington was in large measure responsible as an example of an officer of the highest rank preferring easy clothes to tight ones. A plain blue frock opening at the throat to show a white cravat was his invariable field dress throughout his campaigns. He had for his own wear a cocked hat one-third the size of the huge one prescribed for general officers. There was a famous occasion, after the restoration of Louis XVIII. in 1814, when the King and the royal princes, with a brilliant suite, attended a state performance at the Odéon Theatre. The house was ablaze with uniforms, military and civil, of many nations and the gay dresses of ladies of the court. In a box immediately opposite to the royal one sat the Duke—in plain evening dress! The pride that apes humility? Not at all. *Le vainqueur des vainqueurs* could scarcely be suspected

of that. Simply, as he had to sit through a long performance, he chose to do so in clothes that enabled him to sit in comfort.

Much praiseworthy attention is now given to the equipment and clothing of British troops serving in hot climates; but it was otherwise through much of the nineteenth century, and the amount of suffering, disease, and death entailed by the neglect of proper provision is not to be calculated. When Colonel Luard was preparing his book in 1850-52 he received letters from many officers calling his attention to this grave matter. One of these writes:—

'I shall be very glad if you dedicate a portion of your work to the dress of our soldiers in the Colonies. . . . I have myself seen the Spanish, French, and Dutch troops in the West Indies much more healthy than our own, from great attention to their comfort in their dress. . . . The whole body of civilians in the tropics appear in loose white jackets and trousers and a skull cap, . . . the shakoes and red coats of our troops were not altered in our West India colonies.'

A cavalry officer remarks: 'I hope you will dwell on the madness of our soldiers wearing leather caps under a tropical sun'; while another observes that 'a brass helmet was not found serviceable in Africa by the 7th Dragoon Guards when that regiment was at the Cape.'

Our troops suffered horribly during the first Kaffir War, 1846-48, from being clothed exactly as they had been at home—leather stocks, tight coatees, heavy shakoes, and all the rest of it. Some consideration was shown for the soldier in the second Kaffir War, 1851-52. Captain King, of the 74th Highlanders,

describes how his regiment landed at Cape Town (after a voyage from England of two months!) wearing their ordinary clothing, and it was not until they had marched far into the interior that 'our bonnets and plaids were replaced by a costume more suitable for the bush—viz., a short dark canvas blouse; in addition to which feldt-schoen and lighter pouches, made of untanned leather, were issued to the men, and broad leather peaks affixed to their forage-caps.'[1]

Captain King's narrative is illustrated by lithographs from his own excellent drawings, which show his men, heavily accoutred with pack and pouch, and with no protection against the sun except the aforesaid peak to the forage-cap, severely handicapped in fighting nearly naked blacks armed with rifles. No wonder the 74th lost heavily, their commander, Colonel Fordyce, falling at their head in a bush fight, together with some of his best officers.

It is not only in matters of dress and equipment that we have learnt consideration for our troops on foreign service. The splendid organisation of the Royal Army Medical Corps has been severely tested in coping with the requirements of such a force as it was never contemplated Great Britain would or could put in the field; but the test was most nobly met; the latest discoveries in science were employed to avert disease and mortality from wounds, thereby saving soldiers and their families and friends from an incalculable amount of misery. The Transport Service not only met the extraordinary demand

[1] *Campaigning in Kaffirland*, by Capt. W. R. King, 1853, p. 27.

upon its resources in the conveyance of necessary supplies—food, munitions, etc.—but proved equal to the punctual deliverance of the vast stores of comforts and even luxuries consigned from voluntary sources at home.

Among the said luxuries is one whereon the Iron Duke would have turned no favouring eye. The tobacco which was supplied to our troops at the front—ay, and in hospital at home—must have amounted to a prodigious figure. When the Duke was Commander-in-Chief in 1845 he issued the following counterblast:—

'G.O. No. 577.—The Commander-in-Chief has been informed that the practice of smoking, by the use of pipes, cigars, and cheroots, has become prevalent among the Officers of the Army, which is not only in itself a species of intoxication occasioned by the fumes of tobacco, but, undoubtedly, occasions drinking and tippling by those who acquire the habit; and he intreats the Officers commanding Regiments to prevent smoking in the Mess Rooms of their several Regiments, and in the adjoining apartments, and to discourage the practice among the Officers of Junior Rank in their Regiments.'

There was no Press Censor in those days, and *Punch*, which was then a vigorous stripling in its fourth year, was allowed to make merry over this fulmination, declaring that officers of the army were greatly perturbed, 'dreading the possibility of being thrown upon their conversational resources, which must have a most dreary effect!' Tobacconists drove a brisk trade in pipe-stoppers carved in the likeness of the Duke's head. These might now be a fitting object of pursuit on the part of collectors.

LIII

Some Old Books.

Oh for the gift of second-sight, which my lost friend, gentle Andrew Lang, assured us in his notes to *The Legend of Montrose* was quite as prevalent as ever twenty years ago—an oracular delivery, meaning just as much or just as little as the faith and temperament of the hearer contributes to it. Who so prescient as to pronounce what, in the torrent of current publications, will be valuable after half a century? Of no avail is ordinary foresight, nor literary insight, nor business instinct. Fifty years ago Elzevir duodecimos were in costly request: now a score or more of these fat, vellum-clad pigmies may be had for the price of a single volume of Tennyson or Stevenson in the original edition.

Nothing short of second-sight will avail to avert the mischance which once befell me. Wishing to acquire the ninth edition of *Encyclopædia Britannica*, the price whereof was £35, and finding the congestion of my bookshelves to be in striking contrast to that of my privy purse, I cast about to determine what volumes might be drafted in exchange for the coveted quartos. The lot of sacrifice fell upon the *Sporting Magazine*—a complete set (saving two volumes) from its commencement in 1793 to its demise in 1870. Off they went, and in their stead came the *Encyclopædia*. When I read in 1911 that a set of the *Sporting Magazine* had been sold at auction for £950, it was borne in upon me that the advantage of exchange had not been exactly on my side.

After all, it is far from certain that soothsayers would

be of much avail as guides to the bibliomane. Genuine seers, even if they could be had like water 'dowsers' for the hiring, are not encouraging persons when 'the hour' is upon them. From Cassandra and Jeremiah downwards their stock-in-trade has been approaching disaster and death; it is only the venal wayside gipsy who foretells windfalls and good luck. It is really matter of incalculable chance what books may attain to preposterous value; and chance sometimes befriends one as it did once, in humble measure, the present writer. Among the few thousand volumes in my library there are many by which I set great store; but I can only lay finger upon one which might fetch its weight in gold, or even in one pound notes. Unluckily it does not weigh more than an ounce. It turned up in clearing rubbish out of a long-closed drawer, and is Bradshaw's *Railway Guide* for the year 1841—the second issue of the series—the acorn whence sprung the mighty oak of to-day. Where were the seers that they did not warn travellers seventy years ago to husband the back numbers of Bradshaw? By the bye, it is curious to note that this most matter-of-fact periodical bears on its face to this day evidence of the religious faith of its founder. George Bradshaw (1801-1853) was a Quaker and disapproved of the pagan element in the English month-names; so when his time-table grew to monthly dimensions he printed on the cover 1st Month, 2nd Month, 3rd Month, and so on, instead of January, February, March, etc., and this peculiarity has been retained, although now the usual month-names are added in brackets.

Since Lord Haldane, by a wave of his wand and a scrape of his pen, disbanded our Volunteer force of 250,000 or 300,000 men after an existence of fifty years, it is possible that the early satirical literature about them may be a promising, as it is a virgin, field for the collector. I have little acquaintance with it; only here and there a few scraps have lodged in nooks of memory. One squib I recollect, entitled, I think, *The Sludgebridge Volunteers*—describing the formation of a corps in an English country town. To drill the recruits a sergeant of the Grenadier Guards and a corporal of the Coldstream were sent down—brilliant, awe-compelling creatures, each with side-whiskers and

> 'The front of Jove himself,
> An eye like Mars, to threaten and command.'

The pupils were as willing as the instructors were competent; but the accents of Olympus smote strangely on the ears of Sludgebridge. There was perplexing difference between the language of these demigods. The Grenadier conveyed the command to 'shoulder arms' in the syllables 'Shoolah HUMPS!' Not so the Coldstream corporal, who, albeit inferior to the other in rank, differed from him but as one star differeth from another star in glory, yet was no whit his inferior in tremendous mien. He bellowed 'Shalloo HICE!' Straightway the devoted defenders of Sludgebridge were divided, so to speak, into two camps; the corps was rent, as the primitive Church was rent, by a dispute as incapable of solution, and therefore conducted with as much bitterness, as the *Filioque*

controversy, the tonsure argument, or the squabble about the right date of Easter. Which was orthodox —the Grenadier's 'Shoolah HUMPS' or the Coldstream with his 'Shalloo HICE'? Manifestly both could not be right; and, forasmuch as uncertainty is deplorable in a word of command, two schools arose in that nascent corps—brothers in arms, but opponents in practice.

Howbeit, as aforesaid, I have none of the literature which heralded the nativity of the British Volunteers to refer to. These reflections take their rise in a little volume before me in time-darkened calf. Perhaps few less promising sources of entertainment could be offered an unprofessional reader than a drill book; yet *The Exercise of the Foot,* published in 1690 'by their Majesties' Command,' is worth more than a passing glance, were it only for the insight it affords into the instruction of those fine troops wherewith Marlborough was to win renown.

In 1690 Parliament voted supply for an English army of 62,000 men; which number was increased in the following year to 65,000; but upon the peace of 1697 the establishment was reduced to 7000 men in England and 12,000 in Ireland. A battalion in those days was not armed homogeneously as at present; every infantry company was made up of musketeers, grenadiers, and pikemen. The last-named seem to have had no fire-arms; but the grenadiers carried muskets and bayonets. After firing one round they slung their muskets and threw their grenades.

Field movements were few, slow, and commendably

simple. There was one word of command which ought never to have been suffered to fall into disuse—'Take heed!' It was more effective than its modern equivalent—'Attention!' which cannot be rendered very impressive and usually resolves itself into the sternutatory 'SHN!'

Take heed. As soon as this Word of Command is given, there must be great Silence observed throughout the whole Battalion; the Soldiers doing no Motions either with their Head, Body, Hands, or Feet, but such as shall be ordered, looking steadfastly to the Commanding Officer, who is to Exercise and give the Words of Command, as was formerly said in this Exercise.

How those gallant fellows who carried all before them at Blenheim, Ramillies, and Malplaquet must have sprung to the 'Take HEED!' thundered at them by a heavily booted and be-wigged colonel, each man in the prescribed attitude—'that he stand with a straight Body, hold up his Head, look lively, his Eyes always upon the Commanding Officer.' In one particular, if I am not mistaken, there has recently been a reversion to the practice of Marlborough's army in regard to the position of the soldier at attention. Instead of standing with closed heels, as was the regulation throughout the nineteenth century, this old drill book lays down that 'the Feet must be a little Pace distant from each other.'

If the field evolutions were few and simple, the

same cannot be said of the manual, firing, pike, and grenade exercises. In the days of William and Mary it required no fewer than forty separate words of command to call a company to attention, load, fire, and stand-at-ease. Thus—'Musketeers, take heed to your exercise—Joyn your Right Hand to your Muskets—Poise your Muskets—Joyn your Left Hand to your Muskets—Handle your Matches—Blow your Matches—Cock your Matches—Try your Matches'—and so on, every command being explained in the text by minute instructions. The match was a fickle affair, especially in wet weather, rendering far from superfluous the caution appended to the command 'Give fire'! viz. 'As soon as this command is given, you draw the Tricker with the First Finger, drawing the cockt Match quick and strong upon the Pan. If it discharge or not, you must have a special care that you draw your Tricker but once.'

Loading after a volley was a lengthy operation. First, the soldier received the order 'Blow your pans'! then he 'cast about to load,' took a charger (*i.e.* a cartridge) from his bandolier, and was commanded 'Open it with your teeth.' Next the powder and bullet were dropped down the barrel (there was so much windage that no ramming was required at this stage), and the word came—'The Wad from your Hats'! on which he took 'some of the Wad that sticks between your Hat-band and your Hat,' drew forth his rammer and rammed all home.

It is difficult to imagine that even under the elaborate discipline maintained in Marlborough's army

all these parade commands could be delivered or heard in the din and heat of action. In fact, frank confession is made in this matter by Sir James Turner in his well-known, but now scarce, *Pallas Armata*, a book of military exercise published in 1630. After setting out thirty-three separate words of command for firing a single volley, Sir James adds—'Observe that all this multitude of postures in service are redacted to three —*make readie, present*, and *give fire*'!

In another detail Sir James Turner's taste was at variance with modern practice. He could not bear to see arms carried at the trail. 'I have seen,' says he, 'many souldiers (and chieflie the lazie Dutches) to carie their musquet with their hand upon the barrell and the mouth [muzzle] before; which is vnseemlie posture and verie vnreadie for service.'

To return to *The Exercise of the Foot*. Bayonets had been introduced early in the seventeenth century as a kind of dagger to be screwed *into* the muzzle of the four-feet barrel; and it was near the close of the century before Mackay of Scourie invented a socket for the bayonet to fit round the muzzle of the piece, enabling musketeers to fire volleys with fixed bayonets, and to charge instantaneously thereafter. Mackay was in youth Claverhouse's comrade in the Scots Brigade of the Dutch Army, and lived to be routed by him at Killiecrankie, though Claverhouse fell in the moment of victory.

Notwithstanding Mackay's invention, although this drill book gives instructions for the use of the bayonet by musketeers, the pikemen seem to have been chiefly

relied on for the charge, and it is directed that they be constantly trained with the musketeers. Their separate exercise was an elaborate affair, far more so even than the bayonet exercise of twenty years ago. The caution —'Pikes! take heed to your exercise'! is the prelude to a profusion of commands filling, with corresponding instructions, nearly fifty pages.

It is remarkable that, though the wheel-lock, providing for ignition from flint and steel, was invented in Germany in the latter half of the sixteenth century, and the fire-lock or flint-lock was produced in Spain some fifty years later, to come into general use during our own civil war, at the close of the seventeenth century British musketeers, as shown by the drill book, were still fumbling with the old matchlocks. It is not clear when these were finally discarded; but it is certain that the army was equipped with flint-locks during the reign of William and Mary; so that by the time Marlborough became Captain-General of the British forces at home and abroad (1702) his infantry probably was all armed in that manner. These continued the regulation small-arm till 1840. In 1807 a Scottish clergyman named Forsyth invented a fulminating priming; yet Brown Bess with her flint-lock held the field throughout the Peninsular and Waterloo campaigns, wherein the British infantry became famous for steadiness of fire. When Lord Salisbury asked the Duke of Wellington why Souham did not press the British more closely during the critical retreat from Burgos in 1812, he replied—'Because the enemy had found out that our bullets were not made of butter!'

So firm was the Iron Duke's faith in Brown Bess with the flint-lock that in 1835, when the Master General of the Ordnance asked his opinion as to the merits of Forsyth's invention, he would hear of no change in these 'admirable arms.'

'I consider our arm [Brown Bess] as the most efficient that has yet been produced. The fire from it undoubtedly is acknowledged to be the most destructive known. . . . I confess I always considered undesirable any alteration of them. . . . For instance, in case of wet, which musquet will recover soonest—the one with the flint and steel lock, or the one with the lock for the use of detonating powder? I recollect having had a trial with Manton's plugs on that point. The musquet with the flint and steel lock commenced its fire the soonest. . . . Can the soldier be entrusted to take care of sixty or seventy-five rounds of priming composed of fulminating powder? Will it bear all the vicissitudes of heat, cold, wet to which it must be exposed? Where is it to be kept in order that he may get at it for use with certainty and celerity? . . . I do not hesitate to declare my opinion that it would be absolutely impossible to venture to rely upon the priming ammunition, whether in our fleet or in our armies.'

These words seem to sound from a far distant age, yet there are those still living who remember him who spoke them. The Duke had restored to the British Army the prestige which had so grievously waned since the American War; he had blotted out the Duke of York's deplorable record in the Low Countries; he had insisted upon regimental officers knowing and attending to those duties which it had become the practice to leave sergeants to learn and discharge; by uncompromising discipline and, it must be owned, a

liberal use of the lash he had broken his men from the inveterate habit of plundering, until, at the close of six victorious years in the Peninsula, he was able to announce that his troops had been 'brought into such a state of discipline that every description of punishment was almost discontinued altogether.'[1]

The Duke was, in truth, a great military reformer; his impress upon the British Army was as distinct and lasting as that of Frederick the Great on the Prussian service. He set a new standard of efficiency and discipline, sternly cut away abuses, and discouraged mischievous tradition; but he was slow to sanction scientific improvements in the details of armament. He relied more upon the workman than his tools, just as he said he would trust to an army of stags commanded by a lion sooner than to an army of lions commanded by a stag.

LIV

Our obligations to the lower animals.

Very great was the reluctance I had to overcome before bringing myself to accept an invitation to address a section of the International Congress of Women which was held at Westminster in 1899. It was not shyness, although it is no mean test of steady nerves to raise a hoarse masculine voice in a debate chiefly sustained in more musical tones; it was not want of interest, for no reflective mind could be indifferent to the conference of so many eager, active intellects; still less was it

[1] Duke of Wellington's evidence before the Royal Commission on Military Punishments, 1836.

unfriendliness, suspicion, or want of sympathy. It was simply the feeling that men and women view certain subjects in different planes, and are accustomed to come to their consideration by different approaches. My reluctance was enhanced by the nature of the subject allotted to me—The Rights of Wild Animals—for here was matter in which there was hazard—nay, certainty—of sentiment blurring the clear outlines drawn by reason. I had the simple alternative of being true to my conviction that animals, whatever we may feel to be our obligations towards them, have no *rights* in the strict sense, except such as human legislation has conferred upon them; and of being untrue to these convictions and contenting myself, and probably my audience, with a facile denunciation of cruel practices which few would care to defend.

To follow the latter course would have been a gross affront to the intelligence of an unusually intelligent audience; I decided, therefore, to proceed honestly, and endeavour to explain the grounds whereon a sportsman may rest his claim to be deemed humane in relation to animals. I may say at once that my address proved extremely unpalatable to the ladies assembled in congress, who did not consider it beneath their dignity to punctuate its points with hissing of a pronounced and prolonged character.

In a more tranquil environment let me examine afresh the principles which I conceive should guide us in our relation with our inarticulate fellow-creatures.

What are the rights of wild animals and wherein do they consist? Surely before a right can be admitted,

it must be rigidly defined. If it is not, in discussing it we drift straight into the mist of sentiment and prepossession. There may be many persons who maintain that dogs and cats have rights; but who would refuse consideration to rats or centipedes. Is there, indeed, any such thing as an abstract right, independent of human law? Claims, if you like, plenty of them, are recognised in Common Law, and such claims as can be proved to be just or expedient can be established as rights by the legislature; but they remain no more than claims until so established.

But the claims of men and women rest upon grounds which cannot be made to support those made on behalf of the lower animals. The attempt to do so must lead to endless confusion, tending to defeat merciful purpose. The rights of civilised man have been established upon ethical principles of equity which cannot be applied to the lower animals. For instance, the right of every citizen to his private property implies and contains the legal obligation to respect the property of others. Failing that obligation, which of us would agree to recognise the right? It would be difficult to imagine a stronger inherent right to property in an egg than that of the hen which laid it; but whereas it is not possible to imbue the hen with respect for the difference between *meum* and *tuum*, we do not scruple to apply the egg to our own advantage. Nor, I fancy, will any sane conscience be ruffled if plunder is preceded by fraud, perpetrated by the device of a nest egg, which may deceive the hen into laying more eggs than can be good for her constitution.

I do not remember to have heard how the ultra-humanitarian regards bee-keeping. It is surely an industry which, if he has any sense of consistency, he is bound to denounce as sheer rapine. The principle that entitles a man to the fruits of his personal labour lies at the very root of civilisation, yet we encourage the honey-bee, the rival of the ant as a type of industry, to labour incessantly for half the year, and then calmly appropriate the contents of the hive.

'Sic vos non vobis mellificatis apes.'

Have the advocates of the rights of wild animals no qualms in partaking of honey at breakfast?[1]

'Friendship and justice,' said Aristotle, 'are out of question towards any lifeless thing'; and, had he stopped there, the sentence might be cited in support of the old sweeping assertion that everything that is not idiotic is Greek. But he did not stop there: nor can we follow him when he goes on to affirm that 'the same rule applies to a man's horse or ox.' Horses and oxen, as auxiliaries to human enterprise, established their claim, and were the first animals to have their

[1] At the risk of being accused of unpardonable irrelevancy, I must relate an incident which occurred recently to a bee-keeping friend of my own. He lives in a beautiful place by the side of a Scottish river, on the opposite bank he has as a neighbour a certain gallant colonel, who won much distinction in command of a battalion in the late war. The said colonel being of a somewhat fiery temperament, tenacious of his rights, wrote to his neighbour complaining that his bees were crossing the river and spoiling the flowers in his—the colonel's—garden. 'I wish to God you would keep them at home.' It is reported that the other replied: 'I have had my bees carefully counted; there is only one missing, and I think that must be the one that has got into your bonnet!'

claim recognised by civilised lawgivers and converted into legal rights.

The praiseworthy anxiety which has been shown of recent years for the protection of wild birds has resulted in the enaction of a close-time; that is, Parliament has conferred upon certain species the right to rear their young without molestation during a prescribed period. This has been done in recognition of the benefit derived from the presence in our land of the subjects of this legislation. We recognise, that without song-birds, the country would be a less desirable place of abode—without insectivorous birds, a far less profitable field for agriculture and gardening—without birds of brilliant plumage or graceful form and flight, a much less interesting place to spend a holiday: therefore the Legislature has undertaken to protect nightingales as long as they do not forget their melody and do not exchange a diet of caterpillars for one of wheat and strawberries, and swallows as long as they skim about in their own enchanting way and confine their voracity to insect life. But the right thus conferred is based on utilitarian, and therefore selfish grounds, and falls far short of what ultra-humanitarians demand.

Parliament has often been invited to go further—to pass a measure which would make it illegal to kill, capture, or take the eggs of any wild birds, other than game, at any season of the year. Imagine what this bill would lead to if it became law in the absence of any power to enforce a corresponding obligation upon the subjects of it. If Parliament could enforce an obligation upon wood-pigeons and sparrows that they should respect

the property of the farmer in his crops, upon ravens that they should not kill lambs or pick out the eyes of ewes, upon rooks that they should confine their diet exclusively to wireworms and other creatures injurious to plant-life—well and good, let us have as many of these interesting or lively birds as possible: but failing that corresponding obligation, man must exercise the right founded upon might—the *only* right recognised in the scheme of nature—and protect his crops and flocks.

The more closely and carefully one searches in nature for any trace of rights apart from might, the more irresistible becomes the conviction that such rights have no existence among living creatures. Many mammals and birds, most insects, almost all reptiles and fishes, depend for subsistence upon the violent destruction of weaker creatures. Sometimes the act of destruction is accentuated by what, in a human being, would be denounced as sickening cruelty. Consider the habits of the many species of ichneumon fly. The parent deposits its eggs in the bodies of living caterpillars. Presently from the egg is hatched a maggot, which slowly devours the tissues of its living host, carefully preserving the vital organs as a final *bonne bouche*, and, after reducing it to a mere husk, turns into a perfect fly, to repeat in its turn the gruesome tragedy upon another generation. What is the life-history of the cuckoo, whom everybody hails with welcome, but an execrable violation of any domestic rights which hedge-sparrows or water-wagtails might be supposed to possess? For every single cuckoo that

leaves the nest, at least four other nestlings have been thrown out of their home and have perished miserably of starvation.

No: one searches in vain for justice and mercy among the lower animals. Humanitarians would steer clear of many errors and inconsistencies if they studied natural history more closely. For instance, at the aforesaid Westminster Congress, one lady made an eloquent appeal on behalf of horses, which, so far as it related to their humane treatment, and so far as it consisted of condemnation of harshness or neglect, was unexceptionable. But when she went on to draw a picture of the happiness of wild horses in South America, and of the hardness of that man's heart who should throw a lasso over one of them, one could not but remember with a smile that, but for man the tyrant, there never would have been a horse in the American continent. There is some obscurity about the original home of the horse—probably it was on the Asian steppes; but there is no doubt whatever that the progenitors of the American mustangs were simply escapes from the studs imported by the Spanish conquerors.

The same lady put in a plea for the rights of small birds, and asked us if they did not deserve to be respected, seeing how diligent most of them were in destroying the lives of insects. Is our compassion, then, to be limited to vertebrate animals? If the spotted fly-catcher is to be loved and cared for because he swallows many blue-bottles, does it follow that the blue-bottle has no rights? Is not he capable of enjoy-

ing sunshine and sweets as well as his betters? and if we do not recognise his claim to a share of them, it is obvious that our sympathy with living creatures is not disinterested. The tiger which waylays an Indian woman returning from the paddy-field is committing an act not one whit more immoral than the kingfisher which picks a minnow out of the brook; yet we cry Fie! on the booby who shoots the kingfisher (I do, at least), and say Bravo! to the hunter who lays the tiger low. Do you perceive whither all this is leading us? Is it not a warning that to talk about the abstract rights of wild animals is futile and misleading? that the only right which can be recognised is might, and that for guidance in the treatment of such animals we must look elsewhere?

Aristotle's doctrine that no consideration may be shown to the lower animals has been re-affirmed of late years under authority of the Church of Rome. The late Pope, Leo XIII., lent his official sanction to the rule that it is contrary to the principles of true religion to legislate for the well-being of animals, and an infringement of the rights of Christians. This might be reasonable if mercy were a fixed quantity in the world, and if the measure to be bestowed on human beings were stinted in proportion to the quantity filched from the store for the behoof of beast and bird. It is more agreeable and more in accord with the nature of things to regard mercy as boundless,—not to be served out in carefully weighed rations, but drawn from an immeasurable store. The remarkable and perplexing fact, however, remains that neither the Chosen People

nor Christians are bound by their religion to pay the slightest regard to the feelings of animals. The well-known exception to the discouraging silence upon this subject is quoted by St. Paul, only to be rather contemptuously explained away.

Authorised Version.	Revised Version.
'It is written in the law of Moses, thou shalt not muzzle the ox that treadeth out the corn. Doth God take care for oxen? Or saith He it altogether for our sakes? For our sakes, no doubt, this is written, that he that ploweth should plow in hope, and that he that thresheth in hope should be partaker of his hope.' (1 Cor. ix. 9).	'It is written in the law of Moses, Thou shalt not muzzle the ox when he treadeth out the corn. Is it for the oxen that God careth? or saith He it altogether for our sake? Yea, for our sake it was written, that he that ploweth ought to plow in hope, and he that thresheth, to thresh in hope of partaking.'

The rest of Scripture, Old and New, may be searched in vain for any exhortation of mercy towards beasts, for Solomon's observation about 'the righteous man regarding the life of his beast' seems to be either the *obiter dictum* of a nature more refined than his fellows, or, more probably, of common prudence indicating the expediency of keeping domestic animals in good condition. To this day the Jews maintain in European slaughter-houses a method of killing which admits of none of the modern expedients for painless despatch. There is not a word in the Sermon on the Mount about mercy to dumb animals; the Fathers, so far as known to me, are silent on the subject; the earliest example

of consideration shown to them is that of St. Francis, who certainly had a passionate affection for all living creatures. It is with the advent of rationalism that one recognises the rise of a new feeling, when, early in the eighteenth century, an English country clergyman, the Rev. W. Grainger, scandalised his congregation and incurred suspicion of unorthodoxy by preaching the duty of humane treatment of beast and bird.

On the other hand, considerate treatment of animals is earnestly inculcated in the Koran. Mohammed himself carried his kindly feeling towards them to an excessive degree, if we may accept the tradition that he cut the wide sleeve off his coat rather than disturb his favourite cat that was sleeping on it. And at the present time the treatment of horses and oxen in Mohammedan countries is far different from the callous cruelty of Neapolitan cabmen, or the heartless custom in a country far nearer home of causing milch cows to drag heavy weights. As Christians, the highest ascription we can pay to the Being we worship is that His property is always to have mercy, and our conscience revolts from the limitation which confines that mercy to ourselves alone among all His creatures. Queen Victoria's long reign owes no small part of its lustre to the series of Acts regulating the conditions under which human and animal labour may be carried on in the factory, the mine, and the field.

Like all good things, however, this kind of legislation is liable to abuse if it is guided merely by emotion. An instance of mischief wrought by inconsiderate sentiment may be found in one of the earlier of the

series of humanitarian Acts of Parliament, that which first prohibited dogs being employed as beasts of draught. Seventy or eighty years ago the general plight of draught-animals in this country was very different from what it is now; Parliament set about remedying the lot of horses, asses, and mules, but it prohibited the employment of dogs altogether. Why? I suppose because dogs appeal more nearly to our sympathies than any other animal, and an overloaded or ill-fed dog stirs more surely the commiseration of the passer-by than the mute endurance of a cab-horse: nevertheless, the Act was probably a mistake. Mark the behaviour of dogs in those Continental countries where they are still employed to draw carts. They go at their work with a will, and, being naturally social and co-operative animals, seem to enjoy the sense of being helpful. I am never tired of watching these industrious, willing servants in the streets of Brussels or Berlin, and although they are sometimes overloaded (which is a proper subject for legislation), I have never happened to see one otherwise maltreated, nor one whose behaviour showed dread of or indifference to his employer. In fact, it does not pay to ill-use a dog in harness. Strike him, and he will not suffer mutely and redouble his efforts like the less intelligent horse, but will lie down and yelp or creep under his cart. When not in motion he can lie down in the shafts and rest himself or sit up and scratch. The right, therefore, which Parliament has conferred on thousands of British dogs is one to statutory idleness, a very dubious boon, as many a fat, overfed collie could testify, which

would be far happier working for its living than lounging as a superfluous pet. Well-meaning dog-owners should read Dr. Louis Robinson's admirable and suggestive work, *Wild Traits in Tame Animals*, if they would understand what a dog really dreads and suffers from most—namely, solitude. A social and gregarious animal, the dog cannot bear to be alone; his chief delight is co-operation with other animals; if not with other dogs, then with man. I forget whether it was the late Sir Ralph Payne-Gallwey or Sir Henry Smith who has explained the barbarity of tying up an intelligent retriever alone in a barrel, and why it is that a shepherd's or a poacher's dog is so marvellously wise and helpful—because being always with his master, he learns to interpret and execute his wishes almost before they are expressed. It is not every man who ought to keep a dog: he who does, should remember that the noble animal's life is a short one; let him put into it all the enjoyment possible, not by stuffing it or by superfluous caresses, but by allowing it to be as constantly as possible in his company.

No harm, however, has been done by putting an end to dog-labour, beyond depriving dogs of a congenial occupation; but it would be dangerous to give the reins of legislation wholly into the hands of the tender-hearted. Ultra-humanitarian methods verge upon the hysterical. Horrible stories, illustrated by still more horrible pictures, are circulated about the torture of animals in the process of medical and surgical research. Now vivisection undoubtedly is attended with suffering and injury to the animals upon which it is inflicted;

wherefore Parliament has rightly set strict limitations upon practitioners, permitting it only to be exercised by licensed individuals, and insisting upon the use of anæsthetics. The opponents of vivisection seem to exclude from their compassion creatures of their own species, regardless of the immeasurable suffering—the incalculable mortality—which has been warded off the human race by means of knowledge which could never have been attained without experiment on living animals. The great reduction in the annual rate of mortality arising from tuberculosis and diphtheria derives its origin from the discovery of the bacilli of these fell diseases by Koch and Loeffler. More impressive still, by reason of the short space of time wherein it has been manifest, is the degree of immunity from typhoid, unprecedented in the history of the nation, enjoyed by those armies in the war which practised protective inoculation.

Everybody is familiar with the sincerity and vehemence with which the mode of research, whereby these results have been obtained, is condemned by anti-vivisectionists; but who that considers the question dispassionately can weigh the brief sufferings of a few hundred guinea-pigs against the power obtained of averting excruciating disease from millions of human beings? All succour must have been withheld had the anti-vivisection campaign proved successful and the imaginary 'rights' of the lower animals been allowed to exclude British pathologists from this avenue of research.

Even from the point of view of the lower animals

there is something to be said for regulated vivisection, without which no effective advance could have been made in dealing with tuberculosis, which, until Koch, by experiment on living animals, had devised means for detecting the presence of this dire disease, five-and-twenty years ago was rampant in the dairy stock of this and other countries. The Danish Government led the attack against the enemy. In 1897 I saw the test applied to a herd of three hundred red Zealand cows. Three or four re-acted to the tuberculin test and were forthwith isolated, to be fattened for the butcher. In the same year the test revealed the presence of tubercle in 77 per cent. of a herd of ninety cows in Cheshire—no unusual proportion at the time, as subsequent observations proved. Vivisection, then, has been the means whereby veterinary science has been enabled to protect cattle from one of the sorest diseases that afflict them.

'Oh, but we don't want cattle any more!' was, in effect, the answer of the vegetarian members of the Women's Congress; for it appears that when what they consider the rights of animals, wild or domesticated, are recognised by the Legislature, flesh and milk will cease to be articles of human diet. It is wicked, they maintain, to support human life at the expense of animal life: cakes and ale those may still have who can command them, but down with the roast-beef of Old England! be Scotch collops anathema, and Irish stew accounted an unclean thing! This is where ultra-humanitarian squeamishness will land us—a very caricature of the humane treatment of animals. How

many old, honourable, and poetic associations would be swept away in order to establish the new *régime* of grain and pot-herbs! Methinks, were it possible to apply the referendum to our flocks and herds, the reply would come in a fashion on which vegetarians scarcely calculate. From the ground-floor window of a little wayside hostelry in Hampshire I behold a typical English landscape. In the breadth of rich meadow-land stretching away to where a long bank of wood rises dark against the western sky, there are gleams here and there where the light strikes the windings of lucent Itchen, gently dropping from mill to hamlet from hamlet to grey-walled church, till it reaches the towers of sleepy Winchester. The fiery heat of July is mitigated—no more—by a delicate dappling of cloud in the west; the other quarters are clear azure. The only restless creatures in view are a bevy of swifts, whirling round the house-gable, gliding under the elms, and with shrill cries, snapping up countless weaker-winged things. Even the ducks on the mill-head are stilled by the heat, and the poultry chuckle drowsily as they revel in the warm grey dust of the roadside. A dappled string of cows completes the peaceful scene, wending leisurely from the wood across the meadow to the stream. Already the leaders are up to their dewlaps in the water; the rearmost low impatiently, urging those in front to move quicker, so that all may enjoy the delicious bath. Here they will stand for an hour, blissfully indolent, nor leave the gentle flood till certain internal cravings prompt them to return to their pasture. Certes, there never was a

more perfect picture of security and content; liberty—as much as they desire; food—as much as they care to take; no terror from the past, no apprehension for the future. Yet this is the picture your vegetarian would destroy, this the placid existence which he would deny to these creatures. 'Oh, but,' says he, 'we permit the use of milk; we should still require cows.' Yes, you do, although somewhat inconsistently, because what right have you to steal the heritage of the calves? But be it observed, albeit in unfeeling matter-of-fact, that bull-calves are born into this perplexing world in about equal proportion to heifers. If milk, and possibly shoe-leather, are the only bovine products which vegetarians will allow us to enjoy, how is the surplus bull population to be disposed of except by slaughter, which is at the root of the offending? Depend upon it, on the day when Englishmen adopt vegetarianism *en masse*, the knell of dairy-farming will be sounded, because it won't pay to breed cattle unless there is a market for beef, still less to breed sheep for their wool alone. *Exeunt* the cattle upon a thousand hills, for every yard of ground will be required to produce green pease and artichokes for blameless stomachs. My poor landscape will be utterly wrecked—no lowing herd beside the stream; no bleating flock upon the upland; not even the ducks squattering in the tepid shallow, nor the roosters in their dust-bath, for these are only there for ulterior culinary purpose: say—will the sum of animal happiness be greater when these are no more?

Now, though declining to admit that the lower animals enjoy inherent rights, I would be the last to deny or evade our obligations to them. I would be glad if the Legislature would confer more rights upon them than it has already done. The supersession of horse-drawn carriages by automobiles has well-nigh rid the London streets of the scandal of tight bearing-reins. But there remains the crying evil of the docking of horses' tails—that is, hacking several vertebræ off the prolongation of the spinal column. It had its rise in the dark days when bull- and bear-baiting were honoured by a place in the category of sport, rightly now relegated by law to that of outrage. This custom of docking was once universally applied to English roadsters, hunters, and harness-horses. The only useful purpose it ever served was in the Peninsular War, when British dragoons could be most easily distinguished from French by their cock-tails. It fell into disuse with the decline of road coaches, and we owe its unwelcome revival to their partial restoration. It is senseless, barbarous, and disfiguring; it inflicts needless suffering upon brood-mares and horses turned out to grass, depriving them of their natural defence against flies, besides the severe pain and shock caused by the operation itself. It should be discouraged in every possible way by influential persons, by those who lead the fashion in such things, and agricultural societies should refuse prizes to exhibits which have undergone this mutilation. It is strange that polo-players should disfigure their mounts in this barbarous

fashion, for a polo pony must not only gallop, he must be able to turn as quickly as a greyhound. And who ever heard of a docked greyhound? The tail of a horse or a dog is of no small assistance in quick turning.

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